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AND

HOME FARMER.

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TO OUR READERS.



"Be silent, 'tis an unerring way
When you nothing have to say."

Several years ago the founder of the *Journal of Horticulture* introduced the above couplet as a heading to one of his half-yearly prefaces to the index of a completed volume, then one of many which had gone before.

He had nothing to say beyond a brief, yet sincere expression of appreciation of the efforts of all who had aided him in its production—nothing but satisfaction with the position that "our Journal" had attained as the favourite weekly of so many lovers of gardening in many lands—nothing but confidence in the future so long as some of the best gardeners and accomplished writers rendered its pages agreeable, interesting, and useful.

As it was in the past so it is to-day—the same sincere appreciation of the aid of co-workers, the same satisfaction to those who are responsible for the production of the old favourite, and the same confidence in the future. The policy of the past will be preserved, and no change made except towards improvement, and this in the form, not of forcing methods, but of healthy natural growth, like that of a thrifty tree deeply rooted in generous soil.

And this reference suggests one word more. Before the next half-yearly volume is completed the *Journal of Horticulture* will have entered on its Jubilee year. That it has been useful to thousands in the past is a fact we would fain hope none will dispute, and we know a host of friends will wish for it a long career of future usefulness.

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NEW YEAR'S ADDRESS.

I FEEL it to be a special privilege, as indicated last week, to be permitted again to send my annual greeting to the readers of "Our Journal." While our minds have during the past year been, so to speak, saturated with jubilees, the present year indicates another which ought to be peculiarly grateful to its readers, for it was in 1848 that the *Cottage Gardener* first made its humble appearance in the city of Winchester, whence it emerged to take its position as a well recognised organ of horticulture under the name which it has since retained, the *Journal of Horticulture and Cottage Gardener*; and yet, like all things here, this pleasure is mixed with sorrow, for one cannot but think how rejoiced Dr. Robert Hogg (who had for so many years as first joint editor, and afterwards sole proprietor, guided its destinies) would have welcomed the completion of its fiftieth year of true service to the cause he had so much at heart.

When on the threshold of a new year one naturally takes a glance over the past, and the working of the different agencies as influencing the future of gardening. Last week I could only refer to a special and historical act of the Royal Horticultural Society; but its ordinary work demands attention. This has been carried out in the same effective way which has characterised it during the last few years. There may be some combative people who regret the stormy days of South Kensington, but I think they must be very rare, and that all must rejoice in the more peaceful and prosperous time on which the Society has fallen. It is now in very deed what its name imports; its officers are men who are deeply interested in the pursuit which this is designed to encourage, and harmony and good feeling pervade its meetings. Its two great exhibitions, the one at the Temple in May, and the great fruit show held in the Crystal Palace in the autumn, have both maintained their high character; in the former everything that is noticeable in floriculture, from the stately Orchid to the humble hardy plant, is to be seen, while the grand display of the British-grown fruit at the show at the Crystal Palace has tended much to the encouragement of fruit growing in our own

islands, and the lessons taught by it ought to prevent the great mistakes that have been made in times past. Strong things have been said upon the subject of waste in our orchards, but not any stronger than it deserves.

The fortnightly meetings at the Drill Hall have brought together not only splendid collections of plants, flowers, and fruit, but also every novelty that is worth recording. The awards of the Committees are eagerly looked for, and the "imprimatur" of the Society is always regarded as an important commendation of the subject brought forward. Of course mistakes are sometimes made, but no one can have noticed the careful consideration which is given by the Committees to everything brought before them but must recognise the value of their awards. It is still a matter for regret that no more suitable place has been found for these exhibitions, and also that the attendance of visitors is so small. I think, perhaps, that this has been a little better during the past year; still, when one sees the room filled with the most admirable productions, and recognises how almost universal is the love of flowers amongst us, it does seem strange that so few even of the Fellows of the Society who live in London come to these exhibitions.

The Society has also carried out its plan of bringing its influence to bear on horticulture in the provinces; its failure in times past to run an exhibition of its own in our provincial towns made the Council very chary of attempting anything of the kind again, and a plan which they have adopted of some members of the Council visiting one or more of the provincial exhibitions of other societies in recognition of provincial work and awarding medals, has no doubt stimulated horticulture in the places visited, and at the same time formed a link with the great centre in London.

With regard to other horticultural exhibitions I hardly think the Royal Botanic Society has made much progress, although a certain amount of energy has been put into it, and the authorities have expressed a wish for other societies to hold their exhibitions there. The Royal Aquarium, which everyone abuses, and deservedly so, as the most hateful of all places for a flower show, may be regarded as the head quarters of the National Chrysanthemum Society, whose grand exhibitions are held there, though many supporters of the Society do not visit them, or do so in a very hesitating manner. The Crystal Palace, on the other hand, which is the best of all places for a flower show, has by the loss of its late garden superintendent, Mr. Heat, made it the more trying for his successor, Mr. Caselton, in that he had to come into office in so upsetting a year as that of the Jubilee, and both the National Rose Society and the Royal Horticultural Society have been very much interfered with by the arrangements made for its celebration.

A preposterous idea has been lately put forward in some quarters that the Government should buy the Palace for the use of the nation. I call it preposterous, because it could never be of any use to the London public, being too far out, and because the continued maintenance of such an institution would be such that no Chancellor of the Exchequer would care to be responsible for, and produce his balances on the subject. It might suit some shareholders to get something for their investments, which I am afraid they do not now, but it is to be hoped that the day may be far distant when such a project may be accomplished.

Horticultural societies throughout the kingdom have been carried on with their usual varying results, very much depending on the state of the weather on the exhibition days, for a wet day seriously cripples any society. The York Gala Fête met with a terrible catastrophe. It was held during the midst of that tremendous storm in June; the tents came down upon the plants, and I am told by those who witnessed it that a more pitiable sight could not be imagined. The Royal Botanical Society of Manchester has also been in a transition state. The death of its able and indefatigable Superintendent, Mr. Bruce Findlay, was indeed an irreparable loss, but there is so much energy in horticultural matters in Manchester, that I have every hope that the old Society will renew its youth. I think that horticultural exhibitions are more in favour in the West of

England than they are in the East. I can recall nothing eastwards that will at all correspond with the fine shows held in August at Taunton, Weston-super-Mare, Yeovil, and other places. A good deal of this is owing to the fact that the gentry of the neighbourhood make it a point of regarding it as a day with which nothing else is to interfere, but I think it is more than ever evident that flowers in themselves will not attract the multitude, and something has to be added. For instance, at Taunton the exhibition would be an absolute failure financially were it not for the fireworks in the evening; while at York and Shrewsbury the exhibition is more like a great fair than a show of flowers. It is a pity that such societies should be able to quote the Royal Botanic Society as an example they are to follow.

With regard to the taste for flowers I observe no diminution, although I think we may see that it runs more for decoration year by year. One cannot fail to notice how completely in the Carnation and Picotee the old florist varieties have been put into the background by the new Fancy and border varieties, just as already the Fancy Pansy has ousted the old florist kinds; and now the Cactus Dahlia seems to be coming completely to the front, while the old florist varieties, which do not lend themselves to decorative purposes, are, comparatively speaking, neglected; just as in the Chrysanthemum, the Japanese varieties are so much more in favour than the incurved, although I think the mammoth Chrysanthemums are of little use for decorative purposes. I see signs of a revolt against these enormous flowers, whose size appears to be gained at the expense of colour. We get a very large number of new flowers—yellow, white, blush, and light shades of pink; but flowers of such brilliant colour as Cullingfordi, Jean Délaux, and Julia Lagravère we look for in vain. Of what use is it to have these mops of wishy-washy colours? but if you go to a nurseryman and ask for some of those older flowers the chances are ten to one whether you can find them, and as long as such a number of certificates and awards of merit are given to the pale-faces I do not think the evil will become less.

The special societies which encourage the more popular flowers have had a varied experience during the past year. There are some persons who decry these societies; they think that everything ought to be connected with the Royal Horticultural, and that their exhibitions ought to be held under its auspices. I daresay, as a matter of theory, most growers of flowers would wish for this, but there are various objections to such a course. There is no place in which the Royal could offer to hold such exhibitions as those of the Rose and the National Chrysanthemum Society, nor is it in such a condition financially as to offer the substantial subsidies which other public bodies are enabled to do. There are five of these special societies—the Auricula, Chrysanthemum, the Carnation and Picotee, Dahlia and Rose. Of these, the first is the only one that holds its shows at the Drill Hall, the exhibits occupy little space, and though complaints are made of the bad light, yet, after all, it is convenient, and its meetings are generally a success; so it has been this year, and I do not think there is any other meeting at the Drill Hall that is so well attended as that of this Society.

The Carnation and Picotee Society that has been so well fostered by Mr. Martin R. Smith, has shown a balance-sheet that other societies might well envy, but made a mistake this year, for which it has had to suffer. In an evil hour it linked its fortunes with those of the Royal Botanic Society, and as a result their fine balance has been greatly diminished. How could it be otherwise? The obsolete and antiquated methods of that Society are an effectual bar to any free movement. Some years ago the Society was anxious the National Rose Society should go there, and I was deputed to inquire into the matter. I did so, and came to the conclusion that it was utterly hopeless. The National Chrysanthemum Society has had a prosperous year; it is perhaps the most popular of our special societies, and fortunately the blooms resist a plague of smoke, which would be death to many other kinds.

The National Dahlia Society has had also a prosperous year, and closes with a good balance. Its exhibition was held in the Crystal Palace, the most noticeable feature of it being, as I have said, the

prominence given to the Cactus Dahlia. I hear, however, that the Committee has done a curious thing, offering a prize for twenty-four blooms, to be shown on a board, like the Show Dahlias. The entire merit of the Cactus section is that of suitability for decorative purposes, and how this can be gained by exhibiting in such a manner I cannot understand. The National Rose Society has now come of age, having been established in 1876. Many of its earlier friends have passed away, and perhaps more than any other Society of the kind it has been affected by what the witty Dean of Norwich called "Jubilitus;" but I have a firm belief that when we get over the "temporary chill" that it has sustained, it will still go on in its prosperous career.

I do not think that any great change has taken place during the past year in the taste for special flowers. Orchids still maintain their pre-eminence as the most aristocratic, highly valued plants for our glass structures, while for the humbler devotees of Flora we find the Carnation, Chrysanthemum, Dahlia, and Rose still maintain their position as the greatest favourites. It may be asked on what do I ground this assertion? Simply this, that they have secured a large number of "decorations," as the French call them, for new seedlings, and this is a very good test. A few years back the tuberous-rooted Begonia was very much in evidence, but very few varieties have received any award this year. In the same way some years ago single Dahlias were in high favour and received numerous awards, but now they are little thought of, other flowers having taken their place. In several instances, as in the case of the Begonia, the limit of improvement seems to have been reached, and such good flowers can be raised from mixed seed that the cultivation of named varieties has almost ceased.

There are three families of Orchids to which several additions have been made during the past year—Cattleyas, Lælias (under which we must include the new family of hybrids, Lælio-Cattleyas) and Cypripediums. Of Lælias there have been twelve; of Cattleyas twenty-one; and of Lælio-Cattleyas sixteen; a pretty good addition for one year, and I am afraid Orchid growers are running into the error for which they have been amongst the first to decry the florists—namely, for bringing forward a number of varieties which are not distinct from those already in cultivation.

Great complaints have been made with regard to the multiplication of awards to other flowers, and I think not without reason. Surely it is going "beyond the beyonds," as Paddy says, to give awards to sixty-six new Chrysanthemums and thirty-four new Dahlias! If these were all collected together and put before a grower he would be ready to tear his hair and use very strong language if he were told he had to grow all. There were only eight Carnations and ten Roses honoured, and therefore it is that in the two former flowers that the retrenchment, as far as rewards are concerned, should be used.

Our home raisers of Roses have, as usual, delighted growers with their productions. Messrs. Paul & Son of Cheshunt, Messrs. William Paul & Son of Waltham Cross, and Messrs. Alex. Dickson & Sons of Newtownards have all maintained the high position they have acquired as the raisers of new flowers; and whether it be amongst exhibition varieties or flowers suitable for the garden, they have made us practically independent of foreign raisers. Time was when we all eagerly scanned the French lists to see what was coming out; now we take the matter very calmly, and I believe very few amateurs ever see them. Over this change all true rosarians must rejoice. And now, my friends, farewell. All these subjects about which I have written suggest higher and nobler thoughts, for we are all led in that Book which God has given us to be a "lamp unto our feet and a light unto our paths," to look from things here to things above, and let us never forget that in the glowing descriptions to us of the future Kingdom the idea of a garden is not absent; and so may you, my brothers and sisters, while tending your plants and admiring their beauty, be led to look up from them to their Maker, and in them to realise all His wonder and power, who causeth the "bud and the tender herb to spring forth," and at last, when time is ended, may spend a glorious eternity in the Paradise of God.—D., Deal.

NATURE'S LAWS AS APPLIED TO TREES.

BRANCHES CONTROLLING CERTAIN ROOTS.

ALTHOUGH I have no scientific knowledge of the construction of a tree, I will endeavour to prove that certain branches almost solely control certain roots, more especially in trees or plants of quick growth.

In experimenting with trees that were not required, and intended to be cut down, it has been an easy matter for me to select a branch which would be, say, one-tenth or one-twentieth part of the entire tree, and by tracing the raised bark (which can generally be seen in quick-growing trees) to the base, it will be seen what roots the branch derives its principal supply from. If the root is severed the growth of that particular branch is checked; it has to depend upon support from other sources, and the branch is not likely to take such a prominent position in the tree again.

Should you sever or even bruise the bark on the root selected, and apply poison in the form of dissolved arsenic, if the tree is in full vigour it will be seen that in the next two or three days (according to the construction of the tree and climatic conditions), the branch will be perfectly dead, and in most cases it will not appear to injure the other branches. Should such trees as Poplars be operated upon it generally causes a strip of bark, extending from the branch to the root, to die, and yet in many other trees it does not appear to affect the outer layer; but although not visible to the eye it must interfere to some extent with future success. Such experiments should only be attempted where trees are considered to be of no value, and are intended to be destroyed.

I think the above will assist in proving that trees and shrubs which are depending upon several roots, and are making free growth, are built up in sections, each leading section controlling to a great extent corresponding leading roots, otherwise one branch could not possibly be killed by poisoning one root, but the whole of the tree would suffer accordingly.

Should a tree be planted within reasonable distance of water or soil that is more favourable for quick growth, the leading root is almost certain to be in that direction, and in such cases almost the whole of the tree can be killed by poisoning that root, if done at a time when it is depending upon it for its principal supply.

STAKING TREES.

This is work that is too often done when it would be better if the tree were left to Nature. I will try to explain the good and bad effects produced. By way of illustration we will suppose that tree No. 1 is planted. It may be an Oak, Elm, or Plane. It has been growing in nursery rows, is 10 feet high, 8 feet showing a clean stem. At 6 inches above the ground the stem is, say, 1½ inch in diameter, at 8 feet high three-quarters of an inch in diameter, and the roots are well regulated. We place a 4 by 4-inch stake or post, to stand 8 feet out of the ground; the tree is secured to the post at the top, and at three other places at equal distance; it is well supplied with water, but planted in rather an exposed situation. To make sure that the top of the stake or post will not move we place three or four strong wire supports at the top, and secure them by strong pegs in the ground.

At the end of three years under ordinary conditions the stem will be, say, 6 inches from the ground, 2 or 2¼ inches in diameter, and 8 feet from the ground 2¼ to 2½ inches in diameter. By close observation it will also be found that the roots near the base are very small for the size of the tree, and the largest roots are generally not so near the surface. Now, the cause of the diameter being reversed is controlled by the artificial support, consequently the tree has to provide for the greatest strain directly above the stake, which causes it to be larger and stronger than is required near the base.

We will plant another tree; this we will call No. 2. It is a similar tree to No. 1, and planted in the same soil and exposure, but supported only with three stays about 5 feet from the ground, each stay fastened to something that will allow the tree to move with the wind, say 12 or 15 inches in either direction. At the end of three years this tree 6 inches from the ground should be about 3 inches in diameter, and 8 feet from the ground say 1¾ inch in diameter. This tree has not had any unnecessary support, and is proportioned according to the strain placed upon it. The leverage has also been greater on the surface roots, and they are consequently the largest, and would continue to be the leading roots of the tree.

TAP ROOTS.

There is a diversity of opinion as regards tap roots. The largest trees that have come under my notice are almost devoid of a tap root, but are invariably composed of many leading roots of a uniform character, which are also capable of penetrating the subsoil to probably as great a depth as the same species that is trusting principally to a tap root.

Surface roots will in many instances send down tap roots. Perhaps the best specimen I ever saw in that way was last year on the river Murray at Denilquin in N.S. Wales. There was a Red Gum tree on the bank that could not be less than 30 tons in weight. The floods had evidently washed the soil away from the base of the tree, and roots had started under the leading surface roots some 8, 10, or 12 feet away. Each root had gone straight into the earth, and each one may now be called a tap root. There were seven or eight in number, and each one standing out of the ground 6 or 8 feet high, dividing the weight of the whole tree between them. This is another instance of the way Nature adapts herself to circumstances, and shows that wherever the strength is required endeavours to provide for it.

TREES IN OPEN SPACES.

Anyone who will take the trouble to go into the open fields or paddocks and examine large trees that are dotted here and there, they will find the most exposed trees have a tendency to form large spreading branches before the tree is any great height, and that the trunk near the base is of an irregular outline, many of the surface roots near the trunk being of an oval shape, caused by the excessive strain placed upon them in windy weather. In many cases they remain as stays or buttresses, and extend for some distance up the trunk; but where trees are growing closely together in the forests, and shelter each other, they have no occasion to provide for rough winds. The trunk is more of a uniform size, and the amount of roots in proportion to the top would probably not be half as much as would be required for an exposed tree.

ARTIFICIAL SUPPORTS FOR TREES.

No doubt there is something required in the way of supports for trees that are grown artificially that will reduce the excessive growth at the top, and increase the growth of the stems. It should be constructed in such a way that a tree may be secured from 1½ to 5 inches in diameter, and still allow the tree to move—say 6 inches each way—without chafing the bark. It would reduce endless tying, thinning, and pruning, but would require to be neat, cheap, and strong. — THOS. POCKETT, *Curator Public Gardens, Malvern, Australia.*

EARLY STRUGGLES FOR KNOWLEDGE.

(Continued from page 594, last vol.)

STILL keeping in view the object of mastering our own language, I bought Dr. Hugh Blair's "Lectures on Rhetoric and Belles Lettres," an admirable work of great interest, and this led to a long course of reading, in which the chief works were Addison's Spectator, Johnson's Rambler, Macaulay's Essays, Roscoe's Translation of Sismondi's Literature of South Europe, Goldsmith's, Pope's, Shakespeare's, Wordsworth's, and Longfellow's works, with a considerable share of fiction derived from the productions of Sir Walter Scott, Charles Dickens, Thackeray, Lord Lytton, and others.

History also furnished abundant reading, for besides acquiring a general idea of ancient history, especially as regards Greece and Rome, which I obtained from Keightley's books, and Plutarch's Lives, I bought at different times several works on British history. The Hon. Alex. F. Tytler's Elements of General History and a History of British Commerce were two books I found of much interest, but the greatest satisfaction was derived from the history of particular epochs, especially in connection with the Spanish Conquests in America. Prescott's Histories of the Conquests of Mexico and Peru I found most fascinating, and I have re-read them several times, for in their way they are unrivalled. The same author's Reign of Ferdinand and Isabella was a favourite, as were Guizot's General History of Civilisation in Europe, Alison's Philosophy and History of Civilisation, Humphrey's Manual of British India, and Burney's British Neptune (the history of the Royal Navy).

Of others, partaking of the nature of biography, Washington Irving's Life of Mahomet and the Successors of Mahomet, with Smollett's translation of Voltaire's History of Charles XII. of Sweden and Peter the Great of Russia, may be taken as examples of classical works that well repaid for close reading. No general biography influenced me like George L. Craik's Pursuit of Knowledge Under Difficulties, of which the two volumes contain abundant information of the kind calculated to encourage any youth who is anxious to improve himself. The books named are only those which had the greatest effect on my mind, they do not represent a tithe of what I actually read in the period, and the omnivorous character of my appetite may be judged from the range of subjects covered, extending from Fenelon's Adventures of Telemachus and Voltaire's Micromegas to Locke's Essay on the Human Understanding, Addison's Evidences of Christianity, Dr. Paley's Natural Theology, Pascal's Provincial Letters and the Letters of Junius. Some close study was given to logic as embodied in the works of Drs. Whateley and Watts,

and such methodical habits of thought, study, and work as I have formed have been due in a great measure to this portion of my reading.

Geography engaged much of my attention, and I had a great partiality for map drawing. In my book hunts I bought several Atlases of Ancient and Modern Geography, and I had one find which was invaluable to me—namely, A System of Universal Geography founded on the works of Malte-Brun and Balbi, which in a thousand pages of closely printed matter contained quite a cyclopædia of instruction, amply sufficient to satisfy my appetite for the time. Numerous volumes of travels were read, such as Captain Cook's Voyages, Washington Irving's Life of Columbus, and the Voyages of the Companions to Columbus, but two works stand out prominently amongst them all—namely, Charles Darwin's Naturalist's Voyage in the Beagle and Dr. Joseph Hooker's Himalayan Journals, which must be classed amongst the most interesting and instructive books of the kind in the English language. Besides these I spent many an agreeable hour over Hugh Low's Sarawak, Seaman's "Mission to Viti," Fortune's Residence Amongst the Chinese, Ellis's Visits to Madagascar, Frobel's Travels in South America, Bowring's Visit to the Philippine Islands, and Backhouse's Visit to Mauritius and South Africa.

It should be mentioned here that arithmetic was a favourite study, and was pursued concurrently with other subjects. I bought a manual issued to the schools in Ireland entitled The Theory and Practice of Arithmetic, which for simplicity and thoroughness I have never seen surpassed. Certainly it enabled me to wade through all the principal rules without any serious difficulties, and I passed from that to a study of book-keeping, of which a knowledge must be useful to every man at some period of his life.

Turning to science subjects, a long chapter could be written upon my struggles, but I must not tax the patience of the Editor and readers too severely. Apart from the numerous works read, for I bought all my narrow means would permit, and studied them diligently, I had the opportunity of attending many lectures by eminent authorities, including Professors Huxley, Tyndall, and Guthrie, with others, though this necessitated an eight-miles walk every time. I derived great benefit from this instruction. Notes were taken at each lecture, and written out fully afterwards, any difficulties being the subject for research, and this is one of the matters I have always followed out consistently; I could never rest satisfied until a difficulty was overcome, and no efforts were spared in this direction. Geology, physical geography, statics, dynamics, chemistry, and meteorology were in turn the subjects of my earnest attention.

Beyond this I was attracted by astronomy, and investigated this wonderful science as far as time and means would permit. For a few shillings I procured a second-hand pair of globes, terrestrial and celestial, and sufficient progress was made to work out most of the problems given in introductory text books, such as "Keith on the Globes." This, however, I was compelled to give up entirely, though most of the subjects named in this section, but especially chemistry and meteorology, occupied much attention later in my career, and still form favourite studies. In reference to the earlier books read on scientific subjects, I do not remember one that influenced me so much as Michael Faraday's Lectures on Physical Science, of which I was lucky enough to secure an edition prepared by Wm. Crookes.

My daily work in the course of the seven years named as the period of initiatory study covered the whole range of gardening—i.e., outdoor cultivation for vegetables, fruit trees, hardy plants, and ornamental trees, including the operations of digging, trenching, planting, pruning, grafting, budding, and seed-sowing. Under glass it included the cultivation of Vines, Cucumbers, Melons, Peaches, greenhouse plants (especially Heaths and hardwooded plants), stove plants, with Orchids and Ferns. Then, too, I had some special opportunities for learning which do not fall in the way of every youth; I had to assist in laying out some new gardens and in the erection of glass houses, the former giving an inclination in the direction of landscape gardening, and the latter led to the careful study of hot-water heating. In all this I had the advantage of a master's aid, one who loved his calling and who never tired of teaching and training those eager to learn. He gave me the benefit of his life's experience, and as he had commenced with a first-class education preparing him for a higher station in life he had, through a career of over thirty years, brought a trained intellect to bear upon his work which was evident in everything he undertook.—A WORKING STUDENT.

(To be continued.)

A PARK FOR VENTNOR.—The trustees of the estate of Mrs. Evans, the owner of Loftly Downrise, above Ventnor, one spot of which is the highest point of land in the Isle of Wight, have intimated that it is Mrs. Evans's intention to make the town a present of the Downs for the use and recreation of the public for ever. The Downs comprise several hundred acres, and the summit commands a wide range of view over the whole island and parts of Hampshire and Sussex.—("Times.")

EXOTIC NURSERIES, CHELTENHAM.

THE situation and condition of Mr. James Cypher's nursery may not be so well known as that of some of the great London establishments, but its reputation is unique. Thirty years ago Mr. Cypher began exhibiting plants, and he has done so annually ever since. During the last twenty years no show of any importance has been held in England at which he has not exhibited successfully. The largest plant classes are Mr. Cypher's forte, "twenty stove and greenhouse plants" being a favourite class, and in groups of any extent he is invincible; while in specimens or collections of Orchids he is equally successful. At such shows as Shrewsbury and York he frequently secures prize money amounting to upwards of £100, and collectively his winnings have amounted to many thousands of pounds. No exhibitor is feared, and although some growers may be jealous of the Cheltenham exhibits, they are always welcomed by show promoters, as they give the gatherings a tone and interest not obtainable from local exhibits.

A legacy on the demise of an employer, consisting of a small greenhouse and a few plants, formed the origin of one of the most successful plant growers and exhibitors of the nineteenth century. His first appearance in the show tent was with half a dozen Azaleas, for which he received the leading honour, and since then the prizes won are innumerable, and exhibits are frequently sent to two and sometimes three different shows on one day.

But to the nursery, which covers about 8 acres. This is situated in Queen's Road, Cheltenham, a most convenient position in a desirable town. Originally it consisted of the ground occupied by two glass houses. Now the extent named is Mr. Cypher's freehold, and more than half of it is covered with glass—a most creditable memorial to a self-made man. Being in Cheltenham now and again in times past, I have seen the nursery at various periods of the year, and it is at all times deeply interesting, as apart from the seasonable treatment being given to the show plants, there is a general nursery stock of small saleable plants in quite as good condition as the large ones.

THE ORCHID DEPARTMENT.

The Orchids comprise a most extensive and well-grown collection. There are three houses, 60 feet long by 18 feet wide, devoted to Cattleyas. Many of the plants are fine specimens in 10 and 12-inch pots, and others in smaller ones. All are remarkably well developed and luxuriant. The best varieties, such as Mossiæ, Mendeli, Dowiana, aurea, labiata, Trianae, Skinneri, Warneri, and Lawrenceana, are grown in quantity. The plants are arranged in the usual way on a gradually rising stage in the centre and on side shelves, and tanks of water are constructed underneath each of the stages. Dendrobiums find a most congenial home. Four houses are given up to them, and their growth and condition are remarkable. Here again only large numbers of select kinds are grown, the favourite varieties being nobile nobilius, thyrsiflorum, Dalhousieanum with pseudo-bulbs 6 feet in length, fimbriatum oculatum, Parishii, Wardianum, formosum giganteum, Phalænopsis Statteriana, P. Schröderiana, Ainsworthi, and many others. The pseudo-bulbs on some plants of nobile nobilius were over 3 feet in length and as thick as an ordinary walking-stick. One plant of this variety, propagated from a cutting eight years ago, and now a fine specimen, is composed of over 100 bulbs. These plants are grown in a suitable atmosphere when forming their growth, and were, when this visit was made, suspended close to the glass, where they will remain until they begin to flower.

Another most extensively grown section are the Cypripediums. Here I first saw that gem of the class insigne *Sanderæ* with its beautiful yellow bloom. Being late autumn and winter flowers the Cypripediums generally were in the height of their beauty. Like all the other Orchids the plants of various sizes were all in perfect health, and the collection is very complete in variety; but those which attracted my attention most were many especially fine forms of the old insigne, insigne Ernesti, giganteum Cypheri, with luxuriant foliage and a very large white dorsal, green base, brown slipper, and green, brown-lined petals, evidently a free-growing variety; Maulei, Chantini, Leeana superbum, Roezli, Lathamianum, nitens superbum, Morganæ, Schröderæ, Spicerianum in fine variety, T. B. Haywood, and Veitchi superbiens. In all there were thirty distinct Cypripediums in flower at the end of November, and their excellent growth and profusion of blooms indicated them as being especially adapted for amateur cultivation.

In the two Mexican houses there are numbers of specimens of *Cœlogyne cristata alba* and several others, all of which supply abundance of choice cut flowers in spring. *Odontoglossum grande* was fine, as were *Oncidium varicosum*, *Trichosma suavis*, and several of the *Lælias*. The Vanda house was extremely gay with profusely flowered specimens of *V. cœrulea* in different shades of pale blue, and some almost pure white. What a charming December Orchid this is! The cool Orchids were very striking in their great numbers and robust health. There are three houses given up to them. At the time of my visit there were eighteen *Odontoglossums* in flower, but the one most grown is *Alexandrae*, and a magnificent lot they are, some in flower and others producing spikes, and all in perfect condition. Other favourites are *Pescatorei*, *lutco-purpureum*, *Halli*, *gloriosum*, *Edouardi*, *Rossi*, and *Roezli*.

The *Aërides* have a small house to themselves. *Lycastes* are grown in quantity, while *Masdevallias* are very numerous, and so are the *Maxillarias*. *Phalænopsis*, so often seen in indifferent health, are absolutely at home. There were no fewer than 108 distinct Orchids altogether in flower on the 1st of December, and the condition of the

whole of the extensive collection reflects great credit on Mr. John Cypher, who takes this section of the nursery under his special care.

MISCELLANEOUS PLANTS.

The principal Palm house is 90 feet in length and 24 feet in breadth, and in it are located some of the grand specimens so much admired at shows. The *Kentias* are exceedingly fine, especially *Fosteriana*, *australis*, and *Belmoreana*. *Latania borbonica* was also fine, as were *Phoenix rupicola* and *Cocos Weddelliana*, all of which, besides being seen at shows, are made use of in connection with the many public decorations Mr. Cypher undertakes. The Arum house contained over 1000 plants all in flower or bud—an excellent arrangement, as there is an endless demand for them as Christmas flowers. These are planted out and lifted in September. Abundance of white *Lapageria* clothed the roof of this house. The Croton house is 45 feet in length and 24 feet in width. It is full to overflowing with large and small plants. Some of the show specimens which occupy the centre stage are 6 feet high, and as much through. They were all exceedingly clean, and I was informed that this was attributed to liberal syringing in the summer time, and the occasional use of Fir tree oil. Asked which were considered the best varieties, Mr. Cypher replied *Victoria*, *Baron James de Rothschild*, *angustifolium*,



FIG. 1.—MR. JAS. CYPHER.

(Photo by N. May & Co., Limited, Cheltenham.)

Chelsoni, *Mortefontaineensis*, *Thomsoni*, *Reidi*, and *Warreni*. As a house of beautiful foliage nothing could possibly excel what was witnessed.

The New Holland house was mainly given up to specimen plants of *Aphelaxis*, *Phœnocomas*, *Pimeleas*, *Staticeas*, and others; and the Heath house is also devoted to specimens of a size and in a condition rarely seen nowadays. Many of them are huge plants 6 feet high and as much in diameter, and in pots 18 inches wide. As a matter of fact, many of the plants are more amply provided with root room than is generally seen, and this, no doubt, helps to develop their splendid proportions. The *Allamanda* house is 30 feet long and 12 feet wide, and contains a variety of specimens which flower from May till October. There are many duplicates of all the show plants, without which it would be impossible to exhibit at a succession of shows during three or four months of the year. *Nobilis*, *Hendersoni*, and *grandiflora* are the favourite sorts grown.

Ixoras are largely grown, many fine specimens of *Williamsi*, *Fraseri*, *coccinea superba*, *Regina*, *Colci*, and *Duffi* being in evidence. *Bougainvilleas* also have a structure to themselves, and special attention is at present being paid to a new variety named *Cypheri*, which produces flowers hitherto unequalled in size and colour. *Staticeas* are abundant, as are *Anthuriums*, and many fine specimens of each were seen. There is a general Fern house 70 feet by 21 feet; but Ferns are not favourite exhibiting plants with Mr. Cypher. He prefers something more substantial. It is to the skill and attention of Mr. William Cypher that the fine growth and excellent condition of these large plants is mainly due.

So far as I could learn they are produced by ample root room, generous treatment during the growing season, and a thorough maturing of the growth after that is over, as this is said to give both foliage and flower of the highest quality. The specimen Azaleas are another feature

which should not be omitted. They are grown and trained in the old fashioned style, and such plants are rarely seen.

Apart from the successful attention Mr. Cypher gives to exhibiting, he also conducts an extensive nursery business, particularly in Orchids, indoor plants, and open air shrubs. The cut flower trade done, too, is most extensive, especially in bouquets, wreaths, and crosses, for which this nursery is noted. In years gone by many persons will remember Mr. Cypher as a most successful competitor in the dinner table and other decorative classes at shows. I have frequently admired the aptitude he displayed, and have told him frequently it was a pity he discontinued it. One of the most valued prizes Mr. Cypher has ever secured was when the Royal Horticultural Society held its show at Carlisle some fifteen or sixteen years ago, a show much noted for excessive moisture, if I recollect rightly. A local countess offered a twenty-five guinea cup for the best decorated dinner table, and Mr. Cypher won the coveted distinction; a mark, I think, amongst many others which stamps the recipient as a genius in all that relates to flowers. But I am deviating.

All kinds of decorative plants are quite as well grown as the large specimens. Three houses are given up to Maidenhair Ferns. Two large houses were full of December-flowering Chrysanthemums in fine leaf, and with a profusion of buds and bloom. The varieties grown for this time are Niveus, Lady Lawrence, Golden Wedding, and W. H. Lincoln. In the summer time these houses are devoted to Tomato culture. Many Bouvardias are grown for the usefulness and excellence of their flowers at this season. Carnations in pots also receive attention. Miss Jolliffe is a leading favourite, as is Lady Rothschild.

Greenhouse Rhododendrons are finely grown, and were bristling with flower buds like an Azalea. Fielder's White is regarded as the best amongst the latter for cutting. Its flowers are perfect, and it grows so freely that if 2 or 3 inches of wood and a quantity of foliage is cut off with each head of flower, the plant will, by another year, be as luxuriant as ever. Stephanotis are growing on the roof of several of the houses, the flowers being regarded as indispensable in summer for choice decorations. Lily of the Valley is also in great demand, and some 60,000 crowns are forced for the supply during the shorter days of the year. There are also houses devoted to Cinerarias, Primulas, Gardenias, Cyclamens, Camellias, Tea Roses, and other plants.

Upwards of seventy hands are employed in the nursery, and Mr. Cypher's style of dealing with these is original. He does not believe in his men as "rolling stock," consequently they are mainly permanent hands who have been taught in his own efficient way, and master and men live on terms of harmony to an extent that is not often experienced or seen.—PEREGRINE.

HERBS AND AROMATIC PLANTS.

(Concluded from page 604, last vol.)

ANGELICA and Anise are yet in some large establishments esteemed for confectionery purposes. The former, a biennial, if sown in early autumn will produce the following season sufficiently large leaf-stalks for candying, a purpose for which it is almost exclusively grown with us, although put to further uses on the Continent. Anise, an annual now seldom seen in cultivation, I found to be often in demand by an old-fashioned housekeeper, when our summers permitted the ripening of the seeds. Balm and Borage may be mentioned together, both being used in the concoction of claret cup, and woe betide the man who upon their demand is found wanting. However, a few roots of the first, a well-known perennial, will generally meet all requirements, and the annual Borage, when once introduced to the herb border, will eventually assert its right of being by running over the garden. Still to prevent errors, although few can mistake it either in or out of flower, it is best to keep a few plants to their own place; one man who catered for the kitchen having a predilection for gathering *Anchusa italica* in preference to the genuine article.

Fennel, one short row of which will be found sufficient, requires annually cutting down prior to seeding, thus keeping it to its own quarters. Like Borage it is of weedy habit, but indispensable to a collection. Chervil holds a prominent place among the herbs proper, and in some places is in daily demand. In this case several sowings from spring to autumn will be necessary, the latest producing strong plants to stand the winter without "bolting." The ubiquitous pot Marigold is seldom absent from old-fashioned gardens, with its cheerful blossoms, the virtues of which for culinary purposes are now rarely recognised. The improved forms are, indeed, worthy of space in any mixed borders or otherwise, but I still have a *penchant* for a single line on the herb border of the old deep-coloured single variety, which charmed me as a child in the long ago.

Burnet, Caraway, Clary, Coriander, Costmary, and Dill one need hardly descant upon. They are old-fashioned, practically "out of date," hence the reason room was found for them on my herb border. Tansy, too, enters into modern cookery, although its elegantly curled foliage is distinctly ornamental; however, once introduced it is a thorough vagabond, insinuating itself amongst the most substantial of Box edgings. Still, with all its faults I can tolerate it, and for rough decorative purposes, where its highly aromatic perfume is not its ban, I have found it useful for cutting. Chives are often called for by a

French *chef*, and Garlic, to which a small bed may be devoted, with the same treatment as for Shallots, which are equally important, will suit, unless grown on a larger scale. A good manuring, with a well firmed soil, and early planting, will give good ripened bulbs for harvesting ere summer is out.

Rampion, a biennial, the nutty flavoured roots of which are occasionally used in salads, was in one place, where salad making was studied as a fine art, considered to be indispensable. Sorrel, under one or other of its forms, is often called for, but seldom, perhaps, in sufficient quantity to require more than two or three lines of it finding a place on the herb border. The common Sorrel is well known, but there is a round, glaucous-leaved variety, of much more pronounced acidity now rarely met with, but well worth having. Horehound, Wormwood, and Rue, all easily raised from seeds, will invariably be found in a good collection. The merits of Chamomile are, I think, sufficient to justify one, at least, of our beds, as previously outlined, being planted with it; the annual crop of blossoms may be gathered at intervals, as they develop, for drying.

As the various kinds of herbs likely to be required for culinary purposes come to the blossoming stage, good bunches should be cut and dried. Some cooks prefer to do this themselves; but in any case it is as well to have an edition of this *hortus siccus* kept in the garden, each kind to be legibly labelled. Those aromatic plants which remain to be noticed, being chiefly of shrubby habit, may well claim a place in the background of our mixed borders. The principal of these are Lavender and Rosemary, each of which requires no pressing of their claims on those who love old-fashioned plants. A packet of seed of each will give vigorous plants for all purposes, any surplus lending additional interest and charm to the shrubberies or other part of the kept grounds according to circumstances. For the fragrant Southernwood one would fain ask a place, and *Aloysia citrodora*, the so called Sweet-scented Verbena, has charms so peculiarly its own, that no garden, great or small, should be without it; and where a little protection is necessary to insure its well being through the winter, none could grudge the labour thus involved. A small plant wintered under glass will, upon starting in the spring, provide slips easily rooted in a little heat.

Myrtles, two varieties of which, the broad and narrow-leaved, are commonly cultivated, are no less worthy of our regard, and a favoured spot under the shelter of a warm wall. The grace and beauty of the broad-leaved variety when studded with its simple flowers it would be superfluous to extol, whilst sprays of the narrow-leaved kind may well enter into the composition of any bouquet, however rare. Amongst things of lowly growth suitable for rockwork such deliciously perfumed and elegant little flowering plants as *Thymus minima* and *T. minima alba* must be named, and the pungent peppermint-scented *T. corsica*, probably the most odorous of the family, is a gem. Our list, although not exhausted, is, perhaps, for all practical or sentimental purposes, sufficiently comprehensive, hence one may conclude with the hope of eventually seeing a certain amount of interest revived in the matter.—HERBALIST.

A "DULL JOURNAL" AND LIVELY DISCOVERY.

A LESSON FROM LIFE.

"MR. EDWARD ESS, at the Hall, and I both think the last number or two of the *J. of H.* rather dull. He suggests that you might charter the Emperor for a lively series." That is what I have received on a postcard from the Editor, with the laconic request—"Find Ess, then trace 'I.' The postal stamp suggests they are in your district; find them and make the best of them."

I have long known how difficult it is for a gardener to make any kind of forecast of what he may be called on to do, and have been more than once astonished by the nature of things which were assumed to come within the scope of his "duty," and have tried to think of more in order that I might prepare myself to be up to anything; but in all my imaginings I never came within miles of anticipating being called on to play the part of detective or explorer, and that I should receive a missive to "find Ess," I think no one could anticipate such an outlandish surprise.

In ruminating over the matter, I was overcome by some peculiar influence savouring of the romantic, and another missive—an historical missive of the past—filled my mental vision. It, too, was from an Editor to a man of resource and great daring—"Find Livingstone." Oh, the vanity of poor humanity! What utter absurdity that I should, even in a momentary flash, feel myself a Stanley. We cannot, however, help the association of ideas. They just associate themselves in spite of us, and not many of even the most sober, sedate, and unemotional but who have not at some time or other played at "Kings and Queens." But, to come to facts, Livingstone was found, and so was "Ess and I."

I should like to see them now they have read so far of their discovery, and watch them change from hot to cold, and show it, wondering what is coming next. That postal stamp was fatal, and they will learn now of the stranger's call to "see the gardens" in the charge of one, and to gather "advice on Roses" from the other, for in this case was discovered a rosarian who swept the boards at local shows.

When fairly on the track of Ess, I naturally wondered what manner of man I should meet. Sprightly, lively, talkative, and briskly intellectual, I naturally pictured a personage who thought the "J. of H. a little dull." I found him the reverse—quiet, modest, a genuine gardener, and, without doubt, a plodding and evidently intelligent worker; but as to humour, not a trace was discoverable, and only the merest apology for a smile could be extracted from his placid countenance.

The fine old garden, intersected by broad walks, edged with *Sempervivum*, flanked by herbaceous borders, backed with espalier fruit trees, with vegetable quarters beyond, the whole enclosed in lofty walls covered with trees old and young; a long range of glass across the northern boundary, vineries, peacheries, plant houses; all and everything in order outside and in—such order that could only be maintained by an earnest man with the limited means at his disposal. All this was apparent; but it was not apparent why this comparatively silent man—a thinker evidently, a listener rather than a talker, and intensely practical—should think any garden literature dull; he rather suggested a shudder at a joke, and a squirm at light reading, as frivolous.

It was a puzzle. I had found my man right enough, but not solved the problem. On passing through the potting shed on the way to the fruit room the "Journal" came in view. "Hope at last," was my silent motto. I must fish warily. "Oh, I see you are a reader of this. How do you like it, and what do you think of it? It is practical, I fancy, but perhaps a trifle heavy at times." The last was rather a leading question, but as Mr. Ess did not write the card in my possession, and probably did not know of its existence, it was felt to be safe. "Yes," was his reply, "I have read it for many years, and have always liked it. As to what I think of it, I have often fancied it runs with the weather—sometimes bright, sometimes dull, and now and then gives us an article almost freezy; but I am not one who finds much fault with the weather, which I try to make the best of, and just now I want frost for filling the ice house."

A rather adroit "turn," I thought, for he did not say he had no fault to find with the Journal. I must try again; and thus proceeded, "That is very much my opinion, and I believe the weather affects writers; they seem to get dull as the leaves fall, and brighten up in spring and summer. I sometimes wish it was the other way about; and what we should do without the jolly Japs and the rest of them I really don't know." A hit, sir, a "palpable hit," for he brightened actually into a smile as he rejoined with promptitude, "That's exactly it; we do want something to 'liven us up. My Japs have not been bad, but we want something more. It is all very well for one writer to tell us in all seriousness how to dig, trench, and prune; another to forage among the funguses for all sorts of queer things with foreign names, and grope among worms, mites, and maggots as if he loved them. Then how one's jaded intellect is revived on being told that 'Brown was first with a fairly good stand, Jones second with one not quite so good, and Robinson third with another which might have been better' (?) Somebody likes all that sort of reading, no doubt, but I like something these long dull nights in this little dull place a bit more lively," and so on. I, however, interposed by asking what kind of matter he liked best. "Oh," he replied, "I am not particular so long as it is gardeny, and such as one can't help reading; but a good deal is so prosy that I am obliged to turn to the fiddle for relief."

How easy it is to be deceived in a man! This at first almost silent listener found his tongue when the right chord was struck; he also revealed his musical instincts; and he evidently appreciates the "music of words" or the sparkling of fancy—"gardeny" notes, set not in a minor key. Work not described, as if it made his back ache in reading it; nor science, dealt out in strings of dry didactics, to puzzle his brain (for he has one), and drive him to the dictionary or—the "fiddle."

Whether the wants of such men can ever be met is somewhat of a problem. It is something, however, to have discovered this particular man, and subjected him to a process of extraction; but the time for departure has come, his leader has to be found—the author of the card, the mysterious Mr. "I." He could not be very far away in such a small colony of rural settlers. To the casual remark, "Not

many gardens worth seeing in a place like this I suppose," the reply came, "No, there's only the Rectory, which is fair; the Grange, that is middling; and a smallish spot called the Fishponds, but I don't know why, for the only pond I have seen is a duck pond." Next thought, Do you know if any of them read the Journal? "No, I don't think the 'places' do" (oh!), "but I think it is read by the gardeners, and I know Mr. Walton takes it regularly, though he is a master." But who is Mr. Walton, I wonder? "Why, haven't you heard of Mr. Isaac Walton?" The subject was getting interesting. I had, of course, heard of "old Izaak," the angler. "Well," was the response, "I suppose our Isaac must be a descendant of his, but he is a better hand with the gun than the fishing rod, and he is strong on Roses." The very man. I want to know something about the new ones. "Then by all means go (tell him you have been here), and you will find a hearty welcome."

A ten-minutes walk brings into view a glimmering of water, and next a perfect snugger of a garden is entered; that is, a garden completely sequestered, with apparently something of many things in it, but most of all Roses, and evidently cherished. "Mr. Walton, I presume," and a slim dark gentleman, with Gladstonian eyes, raised his hat and smiled. "I am in search of information about Roses, and Mr. Ess advised me to call." That was enough. Words of welcome, mixed with Roses, came in a stream. The old man eloquent might speak longer, but not more quickly between the pauses. "I suppose you grow a good many Roses, Mr. Walton, and know most of the best?" "Oh, no, not very many, only a few hundreds in different places; it's a good plan not to have them altogether if you can help it; and I get them from different places—different soils. For this particular soil—rather light—it doesn't do to get them from heavy soils, with a few strong roots and shoots like Willows; I draw them from poorer land, with smaller tops, but bushy bottoms. Always look at the roots. Get plenty of these, and tops will follow. 'No, don't take down names here, we will go in and do that; just time to see another garden before dark.' Twilight came, but the sermon went on until we entered the stately old house, and there found another rosarian—the light Rose of the home, who in her quiet, happy way puts you at ease at once, and you feel like one of the family—a gift which not all possess.

The repast over and to the library for the names of the Roses. "Ah! do you know this paper?" as the host laid his hand on a pile of Journals. "Oh, yes, very well, but think it's been just a little bit dull of late, and the heavy men seem to have been having their innings." Quick as thought came the response—"That's just what we say, but it is a bit better this week; they always get bowled out in time. We like good practice, but good reading as well, you know, and do not mind a little smart fencing, if it is smart." Feeling we were coming to close quarters the time seemed opportune for a direct question—"Might I ask, Mr. Walton, which of the writers you like best?" The reply was a staggerer. "Well, to be frank, I think I like the Farmer as well as any. I feel compelled to read him because it seems to come so easy, and I dabble just a little in his line in growing butter and eggs—real, I mean; and my wife likes the Daffodil of that name." "What, the Farmer! I should have thought you would have been all for Roses." "Yes, but the Rose men are either written out or lazy, but I can manage my own, and sometimes win—look at this cup! I am rather proud of it. Happy thought, shall we try it? It's nearly Christmas, you know." We tried it.

"By the way, Mr. Walton, do you ever write to the Journal; and if not, why not?" "Very little; editors, to tell you the truth, appear to be rather a funny lot. I once sent ten sheets of foolscap reckoning a few people up—judges, I mean—and about a quarter of it appeared. I asked for the rest back, and in about a month it came, 'with compliments.' Well, I will be level with them, I thought, so sent it to another paper; and that is the last I saw or heard of it. Not very encouraging, was it? But, by the way, do you ever write?" Those dark piercing eyes fixed me, and I had to confess that a while ago I did venture into the arena, but brought such a hurricane on my head, that I felt it prudent to retire. "Subject?" Oh! I just thought that some of our friends were getting a little too clever, and I happened to say so, and remind them of the triumphs of the men of the past: that is all.

"What! the 'Decadence of Gardening?'" A nod: and then a shout—"Nelly, come! here's the 'Emperor!'"—don't you remember that is what we called the man who a while ago threw a bomb into the camp and awakened the sleeping army, who rose against him in their wrath; but he is still alive. I am proud to meet your active Imperial Highness, and sorry you can't stay longer: the last train is 7.2: come again when you can." I shall, undoubtedly; and in the meantime "Ess and I" will discover they are found out, while I have tried to "make the best of them."—A TRAVELLER.



CYPRIPEDIUM CONCOLOR.

This is one of the prettiest of the section known to Orchid growers as the bellatulum group, and there are few more interesting or beautiful species in the genus. It is a native of Moulmein, and was first discovered by the recently deceased and distinguished traveller, the Rev. C. Parish, who, however, did not succeed in sending it home alive. This was about the year 1860, and a few years after Colonel Benson sent it home to Kew. In habit the plant is very dwarf, the leaves about 5 inches in length, deep green, with a greyish mottling above and purple beneath. The spikes rise about 6 inches, and carry, as a rule, a single bloom, though twin-flowered scapes are not uncommon.

The individual blossoms are upwards of 2½ inches across, the ground colour being very pale yellow. The number of spots about the base of the segment seems to make the specific name inapplicable, but some forms have few or no spots, and possibly from one of these it was named. A somewhat similar species is *C. niveum*, and for cultural purposes they may be bracketed. This was introduced to this country by Messrs. Veitch of Chelsea, who imported it in 1868 by chance among plants of *C. concolor*, or what was supposed to be this species. Both have been frequently imported since then by our principal nurserymen, and though hundreds of plants have been imported, only to flower for a time and then die, both are now well represented in collections.

Although hardly to be described as a difficult species to grow, *C. concolor* requires care and judgment beyond that necessary for the usual *Cypripediums* as represented by the *barbatum* and other groups, or the kinds, such as *longifolium* or *Schlimi*, that are referred to as *Selenipediums*. The roots of the Moulmein species are not so strong as those of the types with which I have contrasted them, consequently special preparation of the compost is needed. The generally accepted theory is that, as these kinds grow often on limestone rocks in their native habitat, this material is necessary to their well being under cultivation, and possibly there is not much fault to be found with this.

But it is certain that in many cases the plants thrive well without it, growing finely in good fibrous loam, a little peat, and chopped sphagnum with charcoal added. In the loam of which I am speaking there is a certain amount of lime, and this may, of course, have some bearing on the satisfactory condition of the plants. At any rate, limestone can do no harm in the compost, and I would not like to recommend anyone who had been successful by using it to discontinue it. It may be utilised in lieu of crocks as drainage, mixed with the compost or placed round the base of the plant after potting. I have seen this latter plan very successfully adopted, and I believe that it acts, to a certain extent, as a deterrent of the souring of the upper layers of compost so frequent when some descriptions of peat are used.

The roots do not apparently in most cases take hold of these loose lumps of stone, and there is an advantage in this, for they can be removed and replaced with fresh as often as necessary. When newly imported these plants are not usually very well rooted, and to get them to produce new tiers of roots must be the grower's first care. Obviously it is no use potting them in the usual way, and, unlike pseudo-bulbous kinds, they do not much relish being laid out on the stage in the way usually practised. They are best potted in limestone crocks or similar material, through which the water passes freely, keeping the base of the plant moist without wetting the foliage much.

Established plants must be very carefully repotted when this becomes necessary, and in turning them out of the old pots fracture of the roots should be avoided. Large pots are unnecessary; they hold too much compost, and this gets sour about the roots before they have time to take proper hold of it. Small or very weak plants may have the advantage of suspended pans, the proximity to light being of great importance. Lay the roots out carefully, retaining any chance bits of charcoal, crocks, or other material that may be still clinging to them. While not raising them much above the level of the pot or pan see that the crown of the plant is not deeply buried in compost.

After potting, water very moderately until the young roots are getting about the new material, but when again thoroughly established they may have a full supply. With regard to position in the house *C. concolor* dislikes sunshine, but on no account must it be placed in a dark corner. If it can be arranged they do splendidly suspended from

the roof, but these positions cannot always be spared for *Cypripediums*. The next best place is on an open stage over some moisture conducting material, such as rough coal ashes or finely broken spar or shingle. The aspect ought to be such that no direct sunlight reaches them at midday, as this is injurious to the foliage.

The heat of the East Indian house is most suitable, and a very moist atmosphere is congenial to rapid progress and freedom from insect pests. Red spider is perhaps the worst of these, and often attacks the under side of the leaves. Frequent spongings have to be resorted to if once these insects obtain a hold on the plants, but, as hinted, a moist atmosphere goes far to keep them in check. Other kinds needing this treatment are *C. bellatulum* and *C. Godefroyæ*, both rather variable species, and all are related to each other. These have proved themselves invaluable to the hybridist, such splendid hybrids as *C. Lawrebel*, *C. concolor-Lawri*, *C. microchilum* (not *macrochilum*), and the newer *C. Chapmani* and its variety *magnificum*, being a small number only of their progeny.—H. R. R.

ORCHID GROWING IN THE NORTH.

THE cultivation of Orchids in the North of England is becoming an increasingly favourite pursuit with those favoured residents of the country who have the means. The Orchid, as is well known, is a beautiful flowering plant which owes its Greek name to the peculiar shape of its root.

The South American Andes are, as compared with other parts of the world, the richest in useful species, but the number of Orchids growing wild in various parts of the world has of late years greatly decreased owing to the immense quantities that have been taken away to various countries. In South America, however, what has done more than anything else to reduce their numbers is the continual increase in the Coffee plantations, before the rapidly extending advance of which great zones of forest trees have been cut down lately, the trees on which the Orchids grow having thus had to make room for Coffee plantations. Few people imagine, when they see beautiful Orchids in luxuriant and gorgeous flower, how much trouble, work, and hardship have to be endured to secure them, to say nothing of the great expense.

Travelling in the Orchid-bearing districts of South America is extremely tedious and costly, and the transportation of the Orchid to Europe or North America from its native home by the collector is a difficult and uncertain process, which accounts to a great extent for the high cost of the Orchid. Orchids do not grow on trees plentifully as do fungi. To begin with, they never occur in large quantities, even where most plentiful, and after the plants, collected with so much trouble, have been carried long distances to the packing place strapped in bags on to the backs of mules, and taken across primitive narrow trails used by the Indians before the advent of the Spaniards, between rocks and trees and across rivers which have to be waded, often being delayed in course of transit for weeks together through having to wait till the low water in the streams is sufficiently enlarged in volume to enable a journey by canoe to be undertaken, only a limited number of Orchids survive.

It has only been after the lapse of a considerable time that practical knowledge of the culture and common sense treatment of the plants has led to their great popularity in this country, where most people who have good greenhouses grow them to a greater or less extent; and the North of England has of late become unusually famous for its Orchids through the enterprise of several Orchid growers who have paid special attention to these plants.

FANCY PRICES FOR FRAGILE PLANTS.

It used to be considered that Orchid growing was a harmless and amusing, if expensive, mania, somewhat after the style of stamp collecting, only more so. Now it is almost a separate, and that the leading, branch of gardening, professional or amateur. Orchids are cultivated in England from seeds, and seeing that it requires generally some eight or nine years, and about four years in the most quickly maturing plants, before they bloom, it will be easy to see how £5 or £10 for a very ordinary and unpretentious Orchid seedling may be a not uncommon price.

Mr. Fred. Scott of Preston, North Shields, has, for an unambitious amateur in a small way of growing, a large collection of fine Orchids, and the Rev. Mr. Burdon of Heddon House, Heddon-on-the-Wall, has some good specimens, including a few rare hybrids. The hybrids, many of which are exceedingly lovely and often very curious, naturally fetch the highest prices, and Mr. Norman Cookson of Oakwood, near Wylam, is one of the most distinguished growers in the country in this department, supplying a great many Orchid collectors in the South of England from his well-stocked Orchid houses. Not many days ago, for an Orchid in a pot of less diameter than a drinking tumbler, a South country Orchid grower was glad to pay Mr. Cookson 180 guineas for a hybrid; the unique rarity of the plant being, of course, what gave it such high value.

In all parts of the tropics, from Peru across America, Africa, and Asia to Siam, Orchid collecting is going on at such a rate that natural Orchids will soon be as rare as auks, and choice varieties of natural Orchids often bring very high prices; but at present the highest prices are given for rare hybrids produced in this country, one of the best known and most successful growers of which is Mr. Cookson, who has such an excellent collection that even a cursory examination of the contents of his Orchid houses would occupy the greater part of a day. — ("Newcastle Daily Chronicle.")

AS OF A DREAM (SEE PAGE 346, No. 2534).

I WISH YOU A HAPPY NEW YEAR!

PRAY do not suppose I am a Rip Van Winkle. "D., Deal" caused me to rub my eyes, however, and to become thoroughly awakened this morning (December 31st, *Journal of Horticulture* a day late) as I read his cursory mention of "Mr. Robt. Fenn," on page 616. He "believes" one thing there, and "thinks" another. Let me assure our "Chaplain" that I have not been napping. I have to consider the burning of the candle at both ends. I have no "living" resources to enable me to put in an appearance at head quarters nearly so often as I could wish—"Out of sight out of mind;" still, "D., Deal" need not have wounded me in the house of my friends by hurling "only an occasional contributor" at my head.

I have been told that one should not "write for the press for a longer period than ten years." Why, I had written reams in that time to the old *Cottage Gardener* before "D., Deal" had become connected with its pages. I seldom troubled our dead and gone respected Editors, however, until I found I had something to say which I thought might be beneficial for the public good in my particular way—which is not that of a rosarian. We must eat to live. My writings have always been devoted to practical work. Treatise upon treatise of mine can be shown in this periodical, which, combined for weight, would form a burden too heavy for your worthy contributor, "D., Deal," to bear, and all, remember, for the sheer love of trying to be helpful.

This subject, however, of the "longest contributor" has arisen quite often enough. I was in hopes it was buried and at rest. About this time two years a challenge was thrown down by a writer, in a learned article, inciting to decide this query. I took no further notice of it than to request a hope that you would let the matter sleep. Now we have got it rising again, and it is best to have it "laid." We shall not want "parson, bell, book, or candle," for I send you bodily the old type number to decide the phenomenon, where you can see that my first public writing in these pages began in 1850, No. 88, page 154, the subject Potatoes, and my last communication you will find in this eventful year of grace, No. 2534, page 345; and now I am awake, I will, if you agree, let you know what I have been doing in 1897 for horticulture since the above was written, merely throwing in here, *par parenthesis*, that I, as a Churchwarden, have taken a chief interest in ("Diamond Jubilee") reseating our St. Michael's Church. I hope "D., Deal," will not find fault with that.

They say that gratitude in its noblest sense is an unknown factor in politics. Then in the pursuit for improving the Cinderella of Nature—the Potato—how must I reckon? Is virtue to be its own reward? The desire to benefit mankind has caused me to experimentalise with Potatoes in earnest from the year 1837, and to bend the printers' backs in Fleet Street, E.C., at no very long intervals apart, from the date mentioned above. A propeller anent the "noble tuber," I take it, as having enthusiastically forced me on without any consideration of the cost, for if I had done this most assuredly the present generation of English Potatoes (some other might have done it but did not) would not be in existence. This same force, I take it, may have impelled Sir Walter Raleigh, who, happening to be in a quarter of the world where the *Solanum tuberosum* grew wild, saw the natives scratching the esculent from the earth as a pabulum for food, brought some to his home in Ireland, withal to benefit his fellow man. Whether Sir Walter was ever recompensed for his patriotism I know not, but his name and fame are hoist upon a Potato petard for ever.

Sixty years ago last spring I caused a portion of glebe meadow (see 2529, page 226), called the Hale End, at Stanton Lacy, Shropshire, to be trenched and fenced apart for experimental purposes, with the object of improving several of the then most popular varieties of Potatoes. I could not satisfy myself in this, for neglect the selecting of the best from the most promising stools for a year or so, and back to their deep eyed or other undesirable normal types they would inevitably go. I lost many years by beating about the bush in this way; but I have given you the history of these disappointments, also that of the unsatisfactory raising of varieties from Nature's promiscuous workings, that the word tautology is rising up with extended caution before my eyes.

As the years rolled on, however, cross-fertilisation came to aid me in 1857, and enabled me to resuscitate the esculent from the disease and decrepitude into which it had fallen. Your pages and the R.H.S. Fruit Committee (of which I was then a member) were soon made aware of these proceedings, for others to take up the tale, which have up to this time of day proved the means of securing for us the best Potato food in the world; and the Potato, I consider, takes a second place only to Wheat in perpetuity for human sustenance. I have for a long time thought, and I now express, that we can go no farther for excellence in this article for

food than what we have got, by further crossings with the wild *Solanum* tribe from Virginia, Peru, and those of the Andes. I will next, if allowed, hark back some two decades. — ROBT. FENN.

(To be continued.)

[What can we say to reconcile these two grand old men of the gardening world and the gardening press? We are bound to say that the "Pioneer" in Potato improvement (for such he is) was the first to commence writing in the "Cottage Gardener," but the "Chaplain" has written the most. With this record, which is founded on facts, let us hope that both the frisky young octogenarians will be satisfied. We have, however, a word or two of historic interest to add. Mr. Fenn has preserved all the letters he has received during his long and busy life. He has chestfuls of them, and knows where to find what he wants. Some of these letters we have seen, and will cite from one or two, because they are worth reading and have never hitherto been published.

We will first take the *last* letter that was written by the late genial Mr. G. W. Johnson (the founder of the "Cottage Gardener") to his old friend Mr. Fenn, as it settles the matter of the "oldest correspondent." The letter is dated January 2nd, 1879, and here it is—"You are the oldest of the 'Cottage Gardener's' recognised correspondents, your first contribution to its pages being in 1850; and I can truly say that no change has taken place in the twenty-nine years in the estimation in which you are held by G. W. J." This "first contribution" was a short note on soot and salt for Potatoes, written now forty-eight years ago.

We will now, as our old friend says, "hark back." In 1861 he seems to have been indulging in poetry; but the old chieftain was one too many for him, as on November 24th of that year he wrote to Mr. Fenn:—"Sir Godfrey Kneller always thought he ought to have been a soldier rather than a painter; and Liston, the comedian, as persistently maintained that tragedy was his forte; whether you think you excel in poetry rather than in prose I do not know, nor need I sit in judgment upon such an opinion, as we do not intend publishing any poetry this year."

This was rather a hard hit, but the genial old Editor had ready a solatium (and it indicates the date of no doubt the finest exhibit of seedling Potatoes, the result of careful cross fertilisation that the world had ever seen), for he goes on to remark—"What an interesting collection was yours at South Kensington last week. I never saw so large a collection of well-grown, perfect, and useful sized Potatoes. There was a cluster of ladies round it, loud in their praise, and it was long before their interest in it slackened." After that the "poet" could not very well complain by being told, in euphonious phrase, that his lines had gone into the W.P.B.

We have not quite done yet. The grafting of Potatoes has been from time to time adverted to as somewhat of a novelty, but here we find the chieftain, under date April 25th, 1872, writing to the "Pioneer"—"Thanks for your notes on the Potato grafting. They shall be fore horse in the next *J. of H.*" They were.

Now, for the last and not quite unseasonable citation, which is highly characteristic of the man who penned the original on December 19th, 1873. "To Mr. and Mrs. Fenn. To the latter I say, with Hudibras, 'Madam, I do, as is my duty, honour the shadow of your shoe tie.' To the former, 'May it never be your fate to lack Grape wine and sound Potatoes'; and to both I say heartily, 'May the coming Christmas and New Year be joyous.'"

To this may we add that during the period which has since elapsed Potatoes of his own raising and Grape wine of his own brewing have not been lacking by the gardener, farmer, and churchwarden of Sulhamstead; and still further may the hope be expressed—a hope in which many will join—that he and the "Chaplain" may be seen crossing swords dexterously, that never wound, after their next joyous Christmas and new year! —ED.]

SUCCESSFUL VIOLET CULTURE.

NOWHERE have I seen Violets in a more satisfactory condition than they are at this season at Bowden Hill House, the Wiltshire residence of H. J. Harris, Esq. Both the Russian and Neapolitan types are grown extensively to meet the demand for blooms, and Mr. W. Penton, the gardener, is to be congratulated upon his success with them.

A good type of The Czar is principally grown in the open, but a trial is to be given to the newer, longer stemmed, larger flowered varieties of more recent introduction. For pit and frame culture the popular Marie Louise is mostly grown, and when I saw these recently there were numbers of fine long stemmed blooms on the plants considerably above the average in quality, while the old Neapolitan was also doing well. To be able to pick twenty or more large bunches at a single gathering during the dull weather prevailing at the end of December, and that, too, without any forcing or undue weakening of the plants, conveys a good idea of what is going on at Bowden Hill House.

Mr. Penton believes in young stocks, planting newly rooted layers every spring, and the strong clumps resulting are not coddled in any way after they are moved into frames and pits—abundance of light and air best suiting them. The Russians are also all young plants, but they are larger than two-year-old plants are usually seen, and are all furnished with abundance of fresh, healthy leaves. Fresh soil, good attendance during hot weather, pure air, coupled with shade from tall trees during the hottest part of the day, are the conditions that suit Violets so well at Bowden Hill.—W. I.



WEATHER IN LONDON.—On Wednesday night last a heavy gale of rain and wind passed over the metropolis. On Thursday morning it was very showery, as were both Friday and Saturday. Sunday, though dull in the morning, cleared later, and the sun shone brightly. Monday and Tuesday were both foggy in the morning, but clear during the afternoon. Rain fell heavily on Wednesday.

WEATHER IN THE NORTH.—The close of the year past and the beginning of the opening one have been marked by almost uniformly dull weather, with a good deal of rain. There were 6° of frost on the morning of the 3rd, but thaw followed by midday, and the evening was raw and cold, and Tuesday morning very wet.—B. D., *S. Perthshire*.

ROYAL HORTICULTURAL SOCIETY.—The first meeting of the Royal Horticultural Society in 1898 will be held as usual in the Drill Hall, James Street, Westminster, on January 11th, 1 to 4 P.M. The four following notifications are also issued by the R.H.S.:—*Examination.*—The Society's annual examination in the principles and practice of horticulture will be held on Tuesday, April 5th, 1898. Candidates should send in their names not later than the 1st of March. A scholarship of £25 a year for two years is presented by G. W. Burrows, Esq., F.R.H.S., member of the Court of the Worshipful Company of Gardeners. *Meetings and Shows, 1898.*—The following are the dates fixed:—January 11th, February 8th, March 8th, 22nd, April 12th, 26th, May 10th, 25th, 26th, 27th (Temple Show), June 14th, 28th, July 12th, 26th, August 9th, 23rd, September 6th, 20th, 29th, 30th, October 1st (Fruit Show), October 11th, 25th, November 8th, 22nd, December 13th. *Notice of Meetings and Shows.*—A reminder of every show will be sent, in the week preceding, to any Fellow who will send to the R.H.S. Office, 117, Victoria Street, Westminster, S.W., twenty-two halfpenny postcards, ready addressed to himself. *Journal, Vol. XX., Pt. 3*, published March, 1897.—Any Fellow no longer requiring this number of the Journal would very greatly oblige by sending it to the Secretary, as it is already out of print.

"THE HORTICULTURAL DIRECTORY AND YEAR BOOK."—As the contents of the thirty-ninth issue of this annual are clearly set forth in advertisements, it is not necessary to repeat them here. A glance suffices to perceive their variety and usefulness. The changes of gardeners during the past year have been very numerous, and all that could be obtained in time for publication were inserted. The work consists of about 530 pages, and every gardener will like to have it handy for reference to various matters, including advertisements, and practically everything in demand in gardens. The price is the same as before, 1s., or by post 1s. 3d.

PEAR BEURRÉ RANCE.—"A very excellent late variety, good bearer, fine for walls," is what I read of this variety in a catalogue to hand, and certainly no better description need be given, for of all late Pears none gives us such all-round satisfaction. An old espalier-trained tree on a south aspect never fails to crop, and if the fruit is left on the tree to thoroughly develop, and not gathered (as is often the case, in stormy autumn weather) before it reaches that stage almost every fruit will ripen perfectly. A few introduced into slight warmth at intervals will keep up a supply, the flavour also being much improved by so doing. Its appearance, a dark green and russet, is sometimes against it, but where late Pears are appreciated this is easily overlooked.—R. P. R., *Liverpool*.

THE HESSLE GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—A meeting of the above Society was held in the Parish Hall on the 28th ult., Mr. Geo. Picker in the chair. Mr. Geo. Giles, Hesslewood Gardens, read an interesting and practical paper on "Variegated Foliage Plants." The essayist described the methods of propagation and suitable modes of cultivation. There was a moderate attendance of members, and a good discussion followed. Mr. Blakey showed well flowered plants of *Cattleya Trianae* and *Cypripedium insigne* var., and Mr. Barker, gardener to W. P. Birkenshaw, Esq., brought a fine plant of *Laelia autumnalis* alba with twenty-two flowers, which received the Society's cultural certificate, also *Laelia anceps* Ashworthæ, *L. anceps* Protheroiana, tastefully arranged on the table with good Roman Hyacinths and Ferns. A vote of thanks to the essayist and Chairman terminated the meeting.

BOTANIST OF VICTORIA.—Mr. J. G. Luehman, for twenty-eight years the assistant of the late Baron von Mueller, succeeds him as Government Botanist of Victoria, and has now been placed in charge of the National Herbarium of Melbourne, with the title of Curator.

LIVERPOOL HORTICULTURAL ASSOCIATION.—The Committee of the above Association has arranged to hold the annual dinner and social evening for members and friends at the Adelphi Hotel, Lime Street, Liverpool, on Saturday, January 15th, at seven o'clock. Owing to the arrangements made for the dinner and excellent musical programme afterwards it is to be hoped that early application will be made for tickets.

A PLEA FOR THE PARKS.—We are accustomed to speak of urban parks as the lungs of cities, but the ideal park is more than a laboratory for purifying the air. It does more than offer an invitation to agreeable physical exercise and a change of mental occupation. Contact with and contemplation of natural scenery, especially of pastoral scenery, brings positive refreshment to the mind. Green pastures and still waters now, as in the days of the Hebrew poet, restore the soul. This, says an American writer, is a fundamental truth, and, therefore, it has profound practical importance.

GARDENING APPOINTMENTS.—Mr. C. Nicholson, for the past four years foreman at Rokeby Park Gardens, Barnard Castle, has been engaged as head gardener to Major Chichester Constable, Wycliffe Hall, Winston, Darlington. Mr. Charles Foster, who has been for some years gardener to M. S. Williams, Esq., Aberpergwm, has been appointed gardener to G. E. Jarvis, Esq., Doddington Hall, Lincolnshire. Mr. R. Bellerby, four and a half years foreman, Askham Grange Gardens, York, is appointed head gardener to Sir Theophilus Peel, Bart., Potterton Hall, Barwick-in-Elmet, Leeds. Mr. Richard Morse, late of Berkley House Gardens, Frome, has been appointed gardener to Captain Knatchbull, Babington, Bath.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—At a recent meeting of the Beckenham Horticultural Society a paper was read on the above subject which created considerable interest. A number of the members present, belonging to various sick and benefit societies, expressed regret that they were unaware of the special advantages of the Society before. It is to be regretted the working of a Society "by gardeners for gardeners" is not much more generally known. Anyone seeking information may obtain it from the Secretary, Mr. W. Collins, 9, Martindale Road, Balham, S.W. The question of admitting members to the benefits of the funds on one year's payment of subscriptions was discussed, and might advantageously receive the careful consideration of the Committee. The question was no doubt prompted by a desire to transfer, without fear of loss of sick benefit in the meantime. Gardeners desirous of making provision for old age, sickness, and death could not do better than transfer at once, especially if young, as the whole sum contributed (less actual annual working expenses) can be withdrawn at seventy years of age, or is paid out in full to the person nominated in case of death. Mr. E. Burge of Oakwood Gardens was accorded a hearty vote of thanks for his interesting and profitable paper.—M. WEBSTER.

CHURCHYARD BOTTOM WOOD.—The Parks and Open Spaces Committee of the London County Council, in a report which they have just issued, state that at the latter part of the year 1895 they had before them an application from the Hornsey Urban District Council for a contribution of £5000 towards the purchase money required for the acquisition of Churchyard Bottom Wood. At that time the Council could not legally make the contribution. Since then authority had been given by Parliament by the Highgate Woods Preservation Act, 1897, for the Council to assist in securing this land as a place of public recreation. They had been urged by the Commons Preservation Society, the Kyrle Society, the Metropolitan Public Gardens Association, and many residents in the district to recommend the Council to make a contribution of money towards acquiring the land, and, after mature consideration, they were of opinion that the Council should assist in the preservation of this desirable open space. It was true that the wood was outside the county of London, but it was so near as to be readily accessible to the inhabitants of the northern districts. And it was right that they should draw attention to the fact that, owing to the rapidity with which the area of the county was being covered with houses, it was already practically impossible to provide any more large open spaces in the central, northern, or eastern districts, except by the purchase of property at enormous cost; and it therefore seemed to them advisable that the Council should join with the other public bodies in preserving this wood for the public benefit. The Committee recommend a contribution by the Council of £2500.—("Garden.")

— DECEMBER WEATHER AT DRIFFIELD.—Mean temperature at 9 A.M. (corrected), 38.53°. Wet bulb, 37.3°. Mean maximum, 44.26°; mean minimum, 33.63°. Highest, 55.8° on the 16th; lowest, 21.0° on the 25th. Mean of maxima and minima, 38.94°. Mean radiation temperature on the grass, 29.03°; lowest, 19.0° on the 25th. Rainfall, 2.385 inches. Number of rainy days, fifteen. Greatest amount on one day, 0.83 inch on the 7th.—W. E. LOVEL, *Observer, York Road, Driffield*.

— THE WEATHER AT HODSOCK PRIORY IN DECEMBER.—Mean temperature, 39.7°. Maximum in screen, 58° on the 16th; minimum in screen, 21° on the 24th. Minimum on grass, 14.3° on the 25th. Sunshine twenty-four hours, or 10 per cent. of possible duration. Rainfall, 2.02 inches. Rain fell on seventeen days. Rainfall since 1st January, 22.55 inches; deficiency from average, 2.73. A mild month, with very little frost; rainfall normal; no snow. J. MALLENDER, *Workshop, Notts*.

— SUSSEX DECEMBER RAINFALL.—The total rainfall at Stonehurst, Ardingly, for December was 4.28 inches, being 1.54 inch above the average. The heaviest fall was 1.11 inch on the 7th (the only day an inch has been registered). Rain fell on fourteen days. The total for the year was 29.06 inches, which is just an inch short of the average. The maximum temperature was 53° on the 16th; the minimum, 25° on the 4th. Mean maximum, 44.07°; mean minimum, 34.27°. Mean temperature 39.17°, which is 1.36° above the average. A wet, stormy month. The new year has come in mild and more settled.—R. I.

— THE WEATHER LAST MONTH.—December gave little frost, although the temperature varied considerably. The wind was in a southerly direction on twenty-eight days. The total rainfall was 2.43 inches, which fell on nineteen days, and is 0.35 inch above the average for the month. The greatest daily fall was 0.58 inch on the 4th. Barometer (corrected and reduced), highest reading 30.690 inches on the 22nd at 9 A.M.; lowest, 28.916 inches at 9 P.M. on the 10th. Thermometers, highest in the shade 57° on the 16th and 17th, lowest 19° on the 23rd. Mean of daily maxima, 44.64°; mean of daily minima, 34.35°. Mean temperature of the month, 39.49°. Lowest on the grass, 16° on the 23rd; highest in the sun, 78° on the 30th. Mean of the earth at 3 feet, 42.58°. Total sunshine, 61 hours 25 minutes. There were eleven sunless days.—W. H. DIVERS, *Belvoir Castle Gardens, Grantham*.

— THE ROSARIAN'S YEAR BOOK.—The very neat and excellently printed annual for 1898 is received. It is edited by the veteran Rev. H. Honeywood D'Ombain, B.A., V.M.H., and contains articles on "The Rev. Joseph Pemberton" (with photograph), by the Editor. "Rose Shows; How they Strike an Observer," by Miss Muriel Grahame; "Yellow Roses," by the Rev. A. Foster Melliar; "The Rose and the National Rose Society," by the Editor; "A Chat about Roses," by Mr. A. Piper; "Roses in the South-West of Scotland," by the Rev. D. R. Williamson; "The Abolition of, and Substitutes for, the Treble Classes," by Mr. George Paul, V.M.H.; and "The Rose Weather of 1897," by Mr. Edward Mawley, Pres. R.M.S., and Hon. Sec. N.R.S. With such an array of talent the issue ought to be a good one, and this is what it seems to be. We hope to refer to it again, and at the present can only say the work is published by Bemrose & Sons, Ltd., London and Derby.

— ALLOTMENTS AND COTTAGE GARDENS IN SURREY.—The success which has attended the systematic judging of several allotments, cottage gardens, and local shows in Surrey, under the auspices of the County Council, has led the Technical Education Committee to issue a circular, of which we give the purport, as follows:—"This Committee feels that this system of judging 'is based on definite principles, under which every crop is appraised by independent officials,' and knows from several years' experience that it is thoroughly trusted by the workers. It has the further effect of not only stimulating to better work those who take part in the competition, but of eventually bringing them to compete with workers in other districts; hence the Committee is now prepared to offer the same advantages to every group of allotments, cottage gardens, and cottagers' shows in the county. Not only will the whole cost of judging be defrayed by this Committee without any expense to the Society, but certificates and prizes of books on gardening for special excellence will be awarded, and a lecture, discussion, or conference held in connection with the shows for the instruction of exhibitors. It is hoped that general county conferences will be held at intervals, and ultimately that a federation of horticultural societies for the industrial classes may be formed, working a general scheme approved by the best authorities on the subject, and aiming at a common standard of excellence." The officials of local societies that may be desirous of joining in the proposals are invited to communicate as soon as possible with H. Macan, Esq., M.A., County Hall, Kingston-on-Thames.

— ALTRINCHAM GARDENERS' SOCIETY.—We are informed that the result of two concerts held in Altrincham under the auspices of the Gardeners' Improvement Society showed a balance in hand of £39 5s., which sum has been divided between the Gardeners' Royal Benevolent Institution and the Royal Gardeners' Orphan Fund.

— LA SEMAINE HORTICOLE.—With the issue of December 25th our Belgian contemporary reaches to the end of its first volume. Throughout the various numbers the pages have been occupied by brightly written notes and articles on all phases of horticulture as well as embellished with many illustrations. As might naturally be expected, considering the source whence our contemporary springs, the Orchid department is admirably conducted, and of never failing interest. To those of our readers who read French we commend "La Semaine Horticole."

— ESSAYS ON PRACTICAL FORESTRY.—We learn that the English Arboricultural Society offers medals for essays on the following subjects:—(1) The planting, maintenance, and management of a plantation for the first twenty-five years on (a) maiden land, (b) land previously planted. (2) The felling and barking of Oak or Larch timber, and the best modes of drying, housing and stacking, and preparing the bark for delivery to the tanneries. (3) The different methods adopted in the measurement of standing and felled timber, with diagrams if possible. (4) Original observations on any diseases attacking forest trees not yet thoroughly investigated. (5) The destruction of insects most injurious to forest trees not yet reported on, and coming under the notice of any individual member in England. (6) The results of any experiments having a practical bearing upon forestry. (7) The best method of reclaiming, draining, and replanting bog land, and the most suitable variety of trees to plant. The competition for the medals for the first two essays is limited to assistant foresters, but for the remaining essays the competition is open.

— AN AMERICAN CATALOGUE OF FRUITS.—A catalogue of fruits has recently been published by the Division of Pomology of the United States Department of Agriculture. This useful and valuable bulletin is the work of a committee of the American Pomological Society, of which Mr. T. T. Lyon was the chairman. Such species and varieties of fruits and nuts as are recommended for cultivation in the United States and in British America are arranged in three divisions:—Fruits mainly adapted to northern localities; sub-tropical and tropical fruits; native and introduced fruits and nuts grown in the open air. The entire region is, says a contemporary, divided into fifteen pomological districts, with primary reference to the influence of latitude, elevation, prevailing winds and oceanic and lacustrine exposures upon their adaptation to pomological pursuits. Comprehensive and carefully arranged tables show the size, form, colour, texture, flavour, quality, season, use and origin, besides the districts in which a particular fruit succeeds.

— EMIGRANTS' INFORMATION.—The January Circulars of the Emigrants' Information Office and the annual 1d. Handbooks show the present prospects of emigration. There is no demand for anyone in Canada at this season of the year, except domestic servants. In New South Wales there is no demand for more labour, and many workmen at Sydney are unable to find employment. Reports from Melbourne, Ballarat, and other towns and districts in Victoria state that there is no demand for more labour. The Vine-growing industry, for which Victoria is admirably suited by Nature, is now in a very depressed condition owing to the low prices offered for the wine and the general want of co-operation among the wine producers. In South Australia there is no demand for farm labourers. Queensland has been suffering for some time past from the tick plague, which has seriously damaged the cattle industry, and from drought, which has been prevalent throughout Australia. From these causes the demand for labour has been small, but the numerous railway and other works, which are now in progress, are helping to provide labourers with work. An agricultural college has been recently established under Government at Gatton, where students may learn farming for a small fee, and other steps are being taken to promote agricultural settlement. In agricultural districts there is a demand for good ploughmen and farm hands. The sugar industry is in a prosperous condition, and there are excellent openings for farmers with a little capital, after they have acquired some experience of the country. Large numbers of persons continue to arrive in Cape Colony from England and Australia, and many find much difficulty in getting work. In the case of any local demand arising, it is supplied by men from Johannesburg (Transvaal) and other parts of South Africa, where the labour market is overstocked. Speaking generally, there is at the present time no demand for anyone in the Colony except skilled mechanics.

HYBRID WINTER FLOWERING BEGONIAS.

By many persons Begonias are regarded solely as handsome summer-flowering plants suitable alike for the garden or the greenhouse. The kinds and varieties utilised for these purposes are certainly very beautiful, but we must not allow our appreciation of them to prevent us recognising the value of newer hybrids that flower from October onwards through the winter. Amongst these latter there are some charming flowers which, coming as they do



FIG. 2.—BEGONIA ENSIGN.

during the dullest months, are most acceptable. There are not hundreds or even dozens of forms, as in the case of those with tuberous roots, which flower in the summer. In fact, the numbers are extremely limited, but every one is good and worthy of a position in the warm greenhouse.

For how many valuable plants horticulturists are indebted to Messrs. J. Veitch & Sons, Ltd., of Chelsea it would be almost impossible to say, but certain it is that when they gave us the first of these hybrid winter-flowering Begonias they added to their laurels. This was in 1885, and since that time several have been added to the list. When Mr. Heal first started fertilising flowers of *B. socotrana* with pollen from flowers of tuberous-rooted varieties we cannot say, but we do know that when John Heal was exhibited before the Royal Horticultural Society on October 13th of the year named above, it was received with pleasure, and was pronounced by the *Journal of Horticulture* to be the forerunner of many valuable plants for winter use. Such has, indeed, proved to be the case, and those of to-day are immense improvements on the one of twelve years ago. The field is still open, and Mr. Heal is at work at Chelsea. Who, then, will venture to say what will eventually be attained to?

As is perfectly well known now, the foliage of John Heal is round and small, the numerous flowers being of rich rose colour, and the same can be said of the leaves of Adonis, which resulted from a cross between an orange coloured tuberous variety and John Heal, the former being the seed-bearing parent. The flowers of this, it will be remembered, are broad in the petal and rosy scarlet in colour, while the whole plant has a resemblance to *socotrana*. The third of marked beauty was named Winter Gem, which was staged at the Drill Hall on January 13th, 1891. In this case a crimson tuberous variety was the pollen and *B. socotrana* the seed parent. It is a charming

Begonia, the soft rose, circular flowers being very pleasing. All of these, it is now conceded, are admirable plants for the winter, and each received an award of merit from the R.H.S. The roots of the first and third named are, as with *B. socotrana*, in the form of bulbils.

It was in October of 1895 that Mrs. Heal was first exhibited, and it is undoubtedly the finest of the section. The large bright crimson flowers are of great substance, while the leaves have a texture and size not apparent in either of those previously adverted to. This and those that will be named subsequently had tuberous rooted varieties as the seed parent, and *socotrana* as pollen parent, or, in other words, they have sprung from the parents of John Heal reversed. Visitors to the Drill Hall will probably remember the basket of Mrs. Heal that was staged by the Chelsea firm at one of the latest 1897 meetings. The day was a dull one, but the flowers stood boldly above the bright green foliage, and made one of the most conspicuous exhibits in the show. Hitherto we have noted single flowers only, but on October 29th, 1895, a hybrid named Success was shown with semi-double flowers of good size. The plant is of branching habit, and the crimson flowers are produced with great freedom. It is a handsome Begonia, and is always much admired, though it is somewhat eclipsed by Mrs. Heal, which only preceded it at Westminster by a fortnight.

Following Success we had another double in 1896 that was called Ensign, and of which we give a woodcut (fig. 2). The colour of this is red, and the shapely plant is wonderfully floriferous. It is one of the best in cultivation so far. Exhibited on the same occasion (November 24th) was Myra, but not being in proper condition it failed in securing recognition from the Committee; nevertheless it is of great value, and is dissimilar from all the others in producing pendent flower scapes that give it a very graceful appearance. The colour is rosy lake. On November 23rd last we had Julius, with double salmon pink flowers. In habit this must be classed as one of the best. The last to be mentioned in our short list is Winter Cheer, for a representation of which see the illustration (fig. 3). This was staged on December 14th, and is of a rich rosy carmine colour, that will insure its becoming a favourite. Each of the six just named are tuberous-rooted, and every one has secured the award of merit, except in the instance already named.

The beauty of these plants and their utility entitle them to consideration from everyone who wishes the best possible display in the winter. Fortunately they do not demand anything very exceptional in the way of culture, for they grow splendidly in an intermediate temperature. An ordinary greenhouse is too cold for them, while a stove house is too warm. Propagation is easy, as plenty of cuttings can be secured which will root freely with ordinary care and attention. They need not occupy any great amount of space, as the plants will flower in as small as 3-inch pots, though of course larger plants require larger sizes.—H. W.

CELERY.

THIS forms one of the most important winter crops in every well-managed garden, for nearly everyone enjoys good Celery, either as a salad or when stewed as a vegetable. To have produce of the highest quality the cultivation of the plants must be of the best from first to last. I find the middle of February a good time to sow for the earliest crop. This is done thinly on a pan of loamy soil, covering with a quarter of an inch of the same finely sifted. The receptacles are then placed in a warm, moist atmosphere. White Gem is one of the best for a first crop, while Wright's Giant White, Solid White, Sulham Prize, and Standard Bearer can be depended on to produce large plants of the finest quality from the middle of August onwards.

A sowing of the larger kinds should be made during the first week in March, and as soon as the plants are large enough to handle they must be pricked into boxes or a frame properly prepared by treading hard on the bottom 6 inches of well decayed manure and spreading over this a couple of inches of fine soil.

The young plants may be dibbled in 4 inches apart up to the seed leaves. Given a good watering and the frames kept close for a few days, they will soon grow, and as they gain in size will require copious supplies of water, as it is quite as important that the plants shall not suffer any check from the want of water in the early stages as at any other period.

We like to prepare our trenches some weeks before planting, and prefer the single row system to two or more. Our trenches for the larger kinds are taken out 6 feet from centre to centre, each one being 16 inches wide and 1 foot in depth. This is nearly filled with manure, or failing manure decayed Oak leaves, and made firm by treading. On this is placed 3 inches of soil, and when planted is not much below the ground level. Some of the finest Celery we ever grew was from trenches filled with leaves, the latter having been saturated with sewage. In removing the plants from the frame or boxes care must be exercised, and the plants damaged as little as possible during the operation. Immediately after planting in the trenches they must receive a thorough watering, and if the weather is cloudy so much the better. The large heads sometimes seen at exhibitions, and which some people seem to consider unfit for consumption (although one is at a loss to know why this should be), are the outcome of marked attention as to thorough waterings, with at

times the judicious use of suitable stimulants either in the form of artificial manures or drainings from the cow house.

The dreaded Celery fly is almost sure to make its appearance on the plants, and must be kept in check by picking off all affected parts, while frequent dustings of soot will check its ravages and prove beneficial as a food. Celery intended for exhibiting must have plenty of room allowed for growing sturdily, 15 inches from plant to plant not being too much, while if double rows are preferred the trenches will need to be 20 inches in width, and the plants placed alternately in the rows. In addition to thorough drenchings of water whenever required, the plants will need to be examined to remove all sucker growths, as well as outer leaves as soon as they show signs of decay.

Earthing the plants should not be commenced until they have attained a considerable size, and pains must be taken in order that the work shall be properly done; a thorough soaking of water should be given the previous evening, and the stems allowed to become quite dry before any soil is placed about them, or they will be sure to decay. It will save time if two pairs of hands are set to the work, one holding together the leaves while the other places fine soil about them. Care is necessary in order to avoid adding too much soil at any one time, as experience has taught us that it is better to err on the side of too little than too much. The plants will require more soil to be added every nine or ten days until the final earthing, when the soil should be placed well up to the leaves, and the sides neatly finished, but not beaten with the spade, as the process does no good to the soil or the plants themselves.

For exhibition during August and September the best and easiest method of bleaching is accomplished by wrapping round the stems strong brown paper, strips cut about 9 inches in width being very suitable. This process should commence about a month before the exhibition with white varieties, but it is better to allow coloured Celery a week or ten days longer.—C. FOSTER.

THE HALL FOR HORTICULTURE.

WHAT IS THE REAL NEED?

I THINK that this may be described as a hardy deciduous perennial. It is continually starting up and making apparent growth, and from time to time various cultivators come forward to assure the world that they know how to make it grow faster; but somehow or other it refuses the treatment proposed for it, it dies down, and the inexperienced say, "Oh! the thing is dead." But no, after a while another expert comes forward, tells us he knows all about it, and that if we only listen to him the thing must succeed. Able financiers have propounded plans for it; would-be reformers, who like to see themselves "leading the way," have oracularly delivered their sentiments; but all to no purpose, the whole thing falls flat, and English horticulture, the first in the world, lays under the reproach of having no habitation which it can call its own. Let it not be supposed for a moment that I am going to propound any scheme. I rather want to clear the air of many things which seem to me to hinder its fulfilment.

I think the first thing for people to consider is what they really want. Some of the projects put forward seem as if the projectors wished to embrace every possible thing connected with horticulture—to abolish Covent Garden, to do away with the Royal Botanic, to deprive the Crystal Palace of its flower shows, and to wipe out the Royal Aquarium. I need hardly say that such plans as these are preposterous. But coming down to less ambitious schemes I would ask, What *do* people want? If they want a place where such large exhibitions as those of the National Rose Society and the National Chrysanthemum Society can be held, I would ask, Have they really considered what this means? It might be used three or four times in the year, but what is to be done with the building during the rest of the time? The expense of keeping it up will be no small thing, and require a considerable sum of money.

Then again we might ask, Where could such a building be placed? There is no place where ground could be had sufficient for the purpose in any central position, and that is indispensable; and it is tolerably certain that if the Crystal Palace could have remained where the first exhibition was held it would have been, instead of as now in financial difficulties, a thoroughly profitable concern. Was not the truth of this exemplified when the Royal Horticultural Society held its show at the Agricultural Hall, Islington? It was a grand exhibition, the place was full of beautiful plants and the only thing wanted was the visitors. The same cause has interfered with the conferences of the Society held at Chiswick. Valuable as they have been, few persons ventured to attend them, and those who did felt how unsuitable the place was for any purpose of that kind.

Dismissing, then, all such ambitious schemes I would ask, What is it that horticulturists really do need? They require a building where the Royal Horticultural Society could find really a home. A more suitable building, though not a much larger one than the Drill Hall, is required for the fortnightly exhibitions—one with better light and fewer cold currents of air; attached to this they require

a theatre or lecture room where the lectures could be delivered. Nothing could be more unsatisfactory than the present condition of things. A curtain is drawn across the upper end of the room; behind this the lecturer and his audience are assembled, while in the Hall itself the exhibition is going on. There is a continued shuffling of feet and conversation, and of course, were the attendance better, these evils would be considerably aggravated; and, altogether, it is not a very exhilarating task that the lecturer has to perform.

There should be rooms also where the various committees might meet, and where the ordinary committees of special societies might hold their gatherings. This would bring the societies themselves more into touch with the Royal, and would, I am sure, conduce to the well-being of such societies, and the Royal also. At present these special societies, with the exception of the Chrysanthemum Society, are indebted to the Horticultural Club for a convenient place in which to hold their meetings. If I take for instance the National Rose Society, I am sure its members would hail with satisfaction anything which would link them with the Royal. Here, of course, too, the Gardeners' Royal Benevolent and the Royal Gardeners' Orphan Fund, and any other benevolent society connected with horticulture, could hold their meetings, and, above all, the Council of the Royal would have a suitable place for itself, which I do not think it could be said

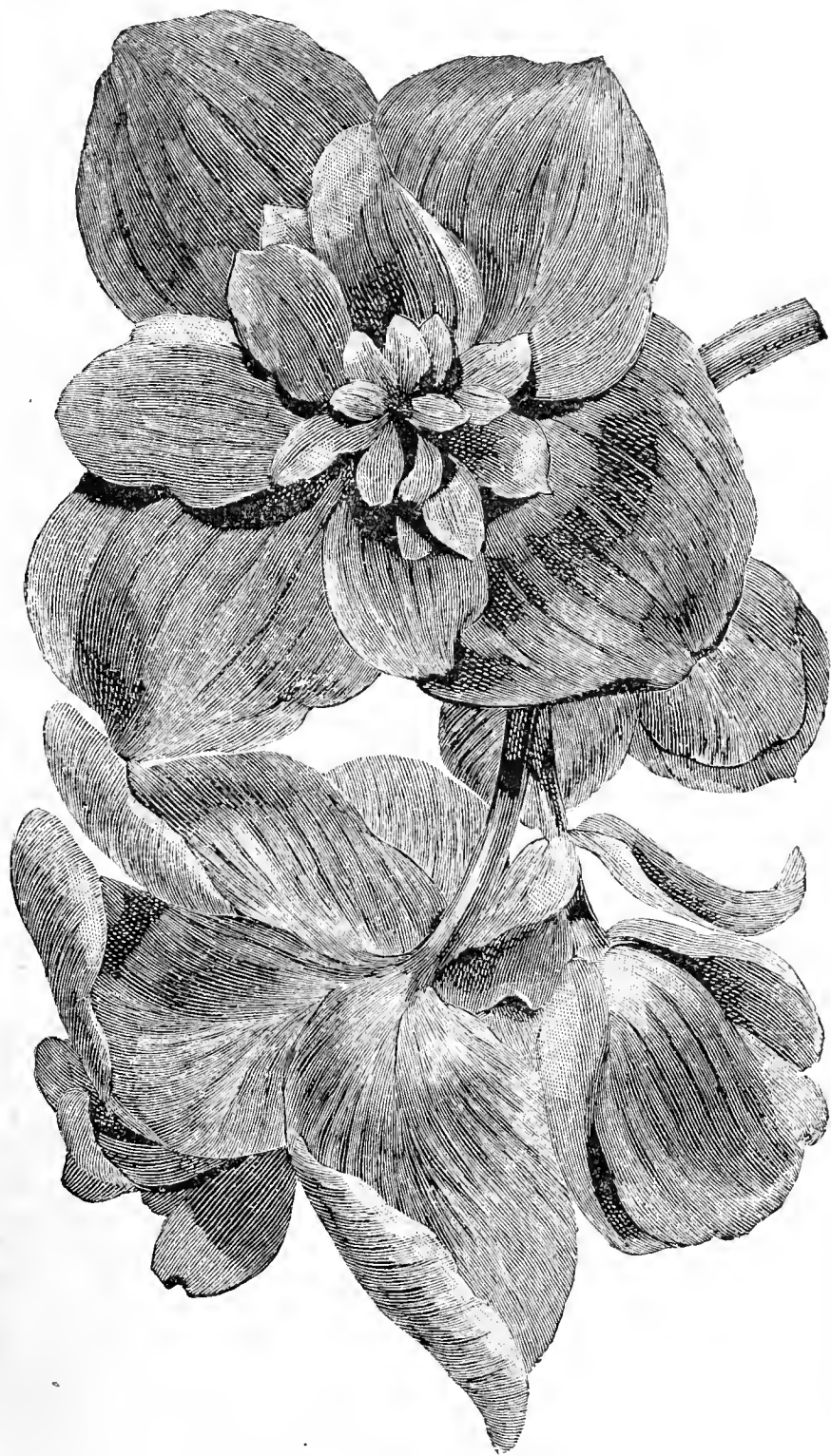


FIG. 3.—BEGONIA WINTER CHEER.

that it at present has. In such a building, too, the Lindley Library would find a suitable home.

Am I wrong, then, in saying that, dismissing more ambitious schemes, such a building as I have sketched out would comprise all that horticulturists need? As I said at the beginning, I have no plan to propose, and even this less ambitious scheme may be unattainable; but at any rate it will be something if horticulturists will agree upon what they really want when they talk about the Horticultural Hall.—D., Deal.



THE N.C.S. AND ITS SILENT SECRETARY.

INSTEAD of the Secretary of the N.C.S. meeting Mr. Moorman's powerful criticism (on page 605, December 23rd) of his former letter, he seems to be running after hares set up in another field. This is an ancient way of escaping from a tight corner. Cannot Mr. R. Dean any longer "face the music" of Mr. Moorman? What about the independent "autonomy" boast now? From data supplied by this "not rash" official, our great National Floral Society is still too weak to stand alone. The Aquarium crutch is a necessity. What if the Directors were to sell the whole concern? As business men surely they would not hesitate to do this if the terms were advantageous. In the case of such a change the N.C.S. must, according to Mr. R. Dean's showing, fall to the ground.

How any person can boast of the success of a number of years' "administration," when the position of a society (without its crutch) would be as deduced by Mr. Moorman from official figures, as stated on the page above cited, passes comprehension. Mr. R. Dean's silence in the face of that clear statement is very significant. It amounts in fact either to contemptuous indifference or acquiescence in the truth of the allegation that the Society which all the world thought so strong is in the pitiable plight of bondsman to a speculative organisation known as an "Aquarium," but really a centre of boxing, music, dogs, and mountebankism, in fact of anything not meretricious that will "draw" the public and produce dividends. It is the obvious duty of the Directors to do the best they can for the shareholders, and as a place of amusement nothing need be said against it. Many of us who object to the place for a Chrysanthemum show do so only because it is for such purpose, and, of late years especially, so utterly unsuitable.

When the shows were first held there, the floor space in the main hall was occupied in a very different manner than has now become the custom. The competitive classes could then be examined as arranged on long rows of tables in the best light available, and no strong objections were made so long as the Aquarium Company was felt to be doing all that could be reasonably expected of it for the Society by which it profited. It is true that Mr. R. Dean, as counsel for the Aquarium Company, does not admit of such profits falling to its share; but does any sane business man believe that the Company would afford space for the N.C.S. shows, however huddled the exhibits, year after year, if no profits accrued? The Directors would not be worthy of their seats at the Board if that were so. They regard the N.C.S. and its followers as a means of income, and if at the time of their shows they can make more of the space than devoting it to competitive exhibits of Chrysanthemums, they make it, and these are sent "upstairs," and any dingy place is thought to be good enough for them.

If Mr. Moorman's statement of the case cannot be controverted, then must his allegations not only be regarded as proved, but also it may be inferred that the Directors of the Aquarium know their power over the Society, and leave its Committee to take what is offered of space, and make the best of it. Whether the "best" is made is another matter, so far as regards the disposition of plants and blooms. Some persons are of opinion that the N.C.S. was not established for providing space for large displays of vegetables, mainly in the form of trade advertisements; and if it be true that some exhibitors buy this space on special, not to say exclusive terms, then there need not be much surprise that the Aquarium people do not put themselves to any great inconvenience in regard to exhibits that come more legitimately within the sphere of the N.C.S.

Another point in Mr. Moorman's unanswered, if not unanswerable, letter (December 23rd) that Mr. R. Dean ought to meet frankly is that he "alone" (page 554, December 9th) is cognisant of the whole of the assistance that the N.C.S. derives from the Aquarium Company. This is his own statement, and has created some surprise. He has not faced Mr. Moorman's comments on the matter, but has preferred to run away. Has any official the right to keep to himself any information he possesses relative to the management of the Society of which he is Secretary (paid or otherwise), and thus leave the Committee in ignorance of the whole facts bearing on the policy for which its members, severally and individually, are responsible? Is it fair even to the Aquarium Company that the full extent of its assistance to the N.C.S. should not be made known? The Chairman of the Committee surely ought to be consulted on everything, and be made acquainted with all that is done for the N.C.S. He is regarded as a just and prudent man, and is not the less respected for his uniform courtesy to all his colleagues, and his innate modesty in demeanour contributes to his strength. Very much will depend on him in not only maintaining but increasing the *status* of the N.C.S. which its Secretary has been instrumental in showing is buttressed (and in his opinion hopelessly) by the R.A.C.

But to return to the tactics of Mr. R. Dean in ignoring Mr. Moorman's last and most important communication. If this is done by way of silencing an opponent who has done what he obviously feels to be his duty in the ultimate interests of the N.C.S. the "move" may or may not be successful; but as the matter stands Mr. Moorman's statements may be

taken by distant members as so weak as not to be worthy of notice, and it is for him to consider whether he is content that this should be so. Has he nothing more to say?—AN OLD MEMBER.

THE N.C.S.—WHY NOT THE AGRICULTURAL HALL OR EARL'S COURT?

AT last not one, but two possible alternatives to the Westminster Aquarium have been suggested for the shows of the National Chrysanthemum Society by "An Exhibitor." This correspondent knows very well if any building is within a shilling cab fare from most of the chief railway termini that this meets all the requirements for the conveyance of produce. In that respect the Agricultural Hall is quite as convenient for the majority of exhibitors as the Aquarium is, and as to visitors they can get for 2d. bus or tram fares as easily to one place as the other.

If the Agricultural Hall could be had on reasonable terms for a November show, and anything like the usual prizes were offered, an exhibition could be arranged which, from a spectacular point of view, has not yet been seen anywhere, and which could not be approached by the Aquarium. There would also be space in the far greater building for all the people who attend the one in Westminster and many more, who could inspect the exhibits in comfort, while there would be no difficulty on the score of refreshments and social gatherings to those who attach importance to them.

It should be remembered, too, that the great populations in the eastern and northern districts of London have learned to love Chrysanthemums above all other flowers through attending the shows provided by the County Council in the public parks. They stream to those shows in thousands, and at the Victoria Park show provided by Mr. Moorman the number of visitors is far greater than attend the four shows of the Aquarium to see the Chrysanthemums.

But are four shows needed? Would it not be better to concentrate resources on *one*? A really great three or four days' show in a building suitable to its display would command success anywhere in London. Minor shows amount to a frittering away of resources. So far as the work of the N.C.S. is concerned all that is needed, apart from one magnificent show, is a room for the Floral Committee to examine new varieties at intervals throughout the season.

It may be said against the Agricultural Hall that a summer show of the R.H.S. was once held there, and that visitors did not "come in their thousands," and that, therefore, the Hall has been proved unsuitable for the purposes of a flower show. It has never been proved unsuitable for a Chrysanthemum show.

In some of the greatest provincial cities and towns—such as Liverpool, Birmingham, Leeds, Hull, and others—spring and summer shows have drained societies dry, whereas autumn shows have replenished their coffers. Spring and summer shows have been held at the Westminster Aquarium, but failed to attract the public in paying numbers, and the shows were abandoned. The exact opposite has been the case with at least the chief autumn shows of the N.C.S., and no doubt the Aquarium Company have benefited by the series to the tune of some thousands of pounds, while we are now startled by the intelligence that the Society cannot meet the demands of a show of its own. It is a humiliating disclosure.

Are there no gentlemen strong and earnest enough, with time at their disposal, who will try and place the Society on a firmer sounder basis, and higher plane? and if they succeed, as able zealous men do succeed, immortalise themselves as public floral benefactors? The working community cannot do this; independent men are wanted to take the lead. There are such who are dissatisfied enough with the Aquarium, and who could, if they would, do splendid work in extricating the N.C.S. from its present subservient position.

The summer shows at Earl's Court were not failures, and it is reasonable to suppose that a great November show would be a still greater success. The London public have got to know their way to that great popular rendezvous, and there are railway stations on all sides of it. It is easier of access than the Aquarium, but not perhaps so handy for exhibitors as this centre and the Agricultural Hall, because for Earl's Court there would be the necessity in many cases of "transhipments" of exhibits from main lines to the "Underground" for reaching the destination. This, however, would not be a formidable impediment. Offer good prizes and the best produce will find them, while thousands of persons would attend a great Chrysanthemum show in a building in which it could be seen and enjoyed.

Has any really serious attempt been made to find another place than the Aquarium for the great show of the N.C.S., and if not, why not? The desire has been loudly enough expressed, and the Secretary does not seem able to find a solitary supporter in singing the praises of the Aquarium. Evidently if any change should be made another secretary would have to be found. Young Mr. Holmes is said to give good help now, and, with the assistance of practical committeemen, he might become a creditable successor to his lamented father, who did so much in raising the N.C.S. to a commanding position.—ANOTHER EXHIBITOR.

THE N.C.S.—WHY NOT A PROVINCIAL NATIONAL?

I AM surprised that no one has suggested that the N.C.S. should hold at least some of its shows in the provinces in the way that the N.R.S. and other special horticultural societies do. I have heard it hinted that a Midland "National" Chrysanthemum Society is likely to be formed upon the lines, but improved, of the N.C.S. The late Mr. R. Owen frequently advocated such a society. I have no wish to disparage the good that the N.C.S. may do, but after all has been said and done, the N.C.S. does

not really lead. Larger shows, as far as Chrysanthemums alone are concerned, are held in the provinces, and other societies offer larger prizes, and have, according to the Secretary of the N.C.S., a much better attendance, also, what is still of further importance, are self-supporting.

It is true that other societies have not the run of the daily and horticultural press the same as the N.C.S. This has a great deal to do with the standing of this Society. Then as to the affiliation of provincial societies with the "National." What, I ask, do they gain by it? and where is the assistance which Mr. Dean mentions as rendered to them in a letter of his in a former number of the Journal?

The N.C.S. is only "national" in name, and were it not for the constant flow of novelties and the enterprise of provincial societies, the N.C.S. would dwindle away. Without in any way wishing to become personal, I ask anyone to analyse the Committee of the N.C.S., and it will be found that its members reside either in London or within a few miles radius, and whilst admitting that some are good growers, there are a large number who are not, and never have been, although they are capital "penmen." Surely there would be no serious difficulty in the way of a Midland society, and if care be taken in the selection of the committee, certificates awarded by this society would have equal weight, or more, than those of the N.C.S. Now that the Birmingham Society has migrated, or rather its exhibition has, to a splendid building, why does not its executive consider the matter of a great national society in the centre of England?—PROVINCIAL.

LATE WHITE CHRYSANTHEMUM ELAINE SQUELCH.

ONE of the best late white Chrysanthemums is a seedling named Elaine Squelch, which I have recently seen at Boxhurst, Dorking, raised by Mr. Squelch. The plants are dwarf; flowers of good substance, petals rather broad, and pure ivory white. It is a great addition to the late white varieties, and will be useful for market purposes.—C. B., Kingston.

WINTER FLOWERS.

IT is bleak and dreary outside in the garden at the present time, but within the greenhouse it is so bright, cheery, and warm that it is like stepping suddenly from winter into summer; a delicious fragrance, too, fills the air, for there is a row of Roman Hyacinths in full flower. Plants which give us flowers in November and December are especially precious. Chrysanthemums are our chief resource, and I have been more than ever pleased this year with mine; but to make a house of any size look gay you must have small as well as large plants, and except under very careful treatment Chrysanthemums are apt to become "leggy."

I know of no plant so pure and sweet as the Roman Hyacinth, unless it be another bulb, the Paper White Narcissus. But this latter is not nearly so free-flowering as the Hyacinth. The double Roman Narcissus has behaved unusually well with me this year in the matter of flowering. Nearly every bulb is throwing up a spike. It has had exactly the same treatment as the Paper White, but is some weeks in advance of it. The fragrance is delicious, but the flower itself, like a great many other double flowers, is wanting in grace and beauty. If you wish to secure an abundance of sweet white flowers in November and December obtain the Roman Hyacinth.

I have never succeeded so well with the Richardias as this year. They were planted out in the kitchen garden, and then produced so many of their large white spathes that I half sighed as I gathered them to think that in the winter they would be exhausted, and we should have no more; but it has not been so. They have been arranged in large pots on a back shelf in the vinery, and there they have continued producing their spathes. In a controversy, therefore, about what is the best to do with the Richardias in summer, I should decidedly give my vote in favour of the planting-out; but I fancy in most seasons a trench would be of great service in keeping sufficient water about the roots; moreover, I do not think that the situation should be a warm one, but only half exposed to the sun. One very great advantage of the Richardia is that the spathes last so long in the room. In these days of room decoration, when large stately growing plants are so useful for that purpose, few are more welcome than the Richardia. At this time of the year to have the dark glossy leaves and tongue-shaped spathes ornamenting some bright corner in the drawing-room is indeed gratifying.

Double Primulas are also early winter flowers almost invaluable. The double fringed are nearly as pretty as single flowers, with the great advantage of standing so well after being cut. The old Double White seems to be more floriferous than the large and beautifully fringed specimens of more recent days. But the latter make up for quantity by the richness and fulness of a single truss. I find that they like deep potting, and that they are less likely to damp-off when so treated than when the rootstock is above ground, and the plant consequently unsteady. With a very little care they can be made to flower during the whole winter. Two words, I should say, give the chief requisites for successful cultivation—viz., warmth and air. Cyclamens require much less of the latter; in fact, I never succeeded so well with any as with some which I shut up in a cold frame in early spring and kept close during the hottest days of April. They came on quickly and flowered, as Cyclamen will flower when well treated, till they became a mass of starry blossoms. But they are sulky, and the special aversion of my factotum, who declares he can make nothing of them. He begged me to buy a packet of seed a few years ago, because he thought he could do better with younger corms. But it was only the same thing again. I have taken them in hand myself now, and

I hope to have Cyclamens again this winter. I am sure one great secret is to give them proper treatment in summer, and I believe that treatment is to plant them out in a sunny position and to give abundance of water.

I must not forget to mention as a first-rate plant for this season Abutilon Boule de Neige. It flowers freely, is easily grown, and has good foliage. The only quality about it at all objectionable is that it does not seem to like a visit to the drawing-room. It is essentially a conservatory plant. Perhaps some would find fault with it for not having any scent; but the globe-shaped bells are lovely enough to do without that. Give this Abutilon plenty of water and good heat and you will have abundance of flowers. A few days ago the border between the white cloth outside and the satin centre of a large dinner table was composed of flowers of *Luculia gratissima*. This made a lovely border, and the scent was quite delicious. It is an old-fashioned plant, but that only makes it the more valuable.—P.

HARDY SHRUBS FOR FORCING.

DURING winter and spring, when outside flowers are over and Chrysanthemums are past, the inside resources of most establishments are strained to their utmost to meet the demand for cut flowers and flowering decorative plants. In those gardens where a sufficient number of reserve houses and pits are at hand the demand can, to a certain extent, be met by large quantities—Ericas, Genistas, Cyclamen, Primulas, Carnations, Cinerarias, and others being grown; but even then forcing has to be resorted to. In those establishments, however, and they are many, where reserve houses are limited, forcing becomes a necessity. Bulbous plants are possibly most in favour, but these do not wholly fill the gap made by the dearth of flowers outside, so hardy shrubs are called into requisition. It is my intention to enumerate those most suitable for the purpose. Several—such as the Rhododendron, Lilac, and *Deutzia gracilis*—are old favourites, but there are many others which have equal calls on our attention, but are rarely seen.

Commencing with *Cytisus*, there are several species which can be admitted to the greenhouse for early spring work. The best are *C. biflorus*, *præcox*, *scoparius*, *Andreanus*, *pendulus*, and *albus*. It is best to grow stocks of these for the purpose of forcing, and keep them in pots, as they do not lift very well. They give little trouble, and after two or three years, if they begin to deteriorate, they should be thrown away and young ones brought on. *C. biflorus* and *scoparius* should be grown from seeds, also *albus* if desired; but all flower better if grown from cuttings or grafts. The latter method is preferable, as good plants can be had quicker. *C. scoparius* or the Laburnum can be used as stocks. *C. scoparius pendulus* makes an effective plant when grafted on tall Laburnum stems, the long, slender growths having a pleasing effect when covered with bright golden blossoms.

Several species of *Prunus* are acceptable. The one most frequently forced is *P. japonica*, and it is a beautiful plant, the long growths being covered with pure double white blossoms. The Chinese *P. triloba* is worthy of note, as also is the pretty pink flowered *P. nana*, from South-Russia. Dwarf plants of *P. cerasifera atropurpurea*, or, as it is commonly called, *P. Pissardi*, are worth attention, the bronze leaves and white flowers being pleasing. Double flowered Cherries may also be used, *Prunus cerasus Rhexi fl.-pl.* and *serrulata* being the best. Short-stemmed bushy plants will be found most serviceable.

The genus *Pyrus* offers contributions in various coloured varieties of *P. japonica*, the scarlet flowered *Maulei*, the small flowered and scented *arbutifolia*, and *nigra*, also *Malus floribunda*. *Amelanchier canadensis* is specially worthy of notice; it forces well, and dwarf bushy plants thickly covered with racemes of pure white blossoms make a perfect picture. *Choisya ternata*, a fairly well known evergreen shrub which produces good sized heads of sweetly scented white flowers, is indispensable, as also is *Viburnum Tinus*.

A number of Lilacs can be used. The varieties of *Syringa vulgaris* are usually selected for this work. The dwarf growing and sweetly scented *S. persica* is not often seen, but forces well, and is in every way a desirable shrub. Good plants of *Corylopsis spicata*, when covered with their catkin-like yellow flowers, are attractive. Among *Deutzias* we find several which are suitable, such as *D. gracilis*, *crenata*, and *Lemoinei*.

The rich genus *Magnolia* provides several very good subjects in the white *M. conspicua*, *stellata*, and the purplish *obovata*. They force well, are striking when in flower, and last a considerable time. *Spiræas confusa*, *Thunbergi*, and *arguta*, all producing neat white blossoms, are useful for variety. *Kerria japonica*, with the double-flowered form, produces large quantities of bright yellow flowers. *Hydrangea paniculata*, with its large terminal panicles of sterile flowers, is well known as a good plant for this work. The sterile form of *Viburnum Opulus* can be satisfactorily used, as also can *Philadelphus Lemoinei*. The tree *Pæony*, *Pæonia Montan*, of which a large number of garden varieties can be had, should be used in quantity, the flowers being both large and handsome. Roses, particularly the Tea section, are always acceptable, and are easily managed. No establishment should be without a selection of the best for spring work.

The genus *Rhododendron* produces many beautiful forms for the purpose. Of the earlier flowering varieties of the evergreen section, such as Cunningham's White, *altaclarensis*, *Nobleanum*, *præcox*, and Rosy Bell, are the best to force. Of the deciduous forms *R. sinense* (*Azalea molle*) and *R. flavum* (*Azalea pontica*), with their respective varieties, are the most useful. *Daphne Mezereum* can be had in midwinter with little forcing,

and is worth a place if only for its perfume. Forsythias should be represented; suspensa is perhaps most useful, but viridissima and intermedia are also of service.

For hardy shrubs strong forcing is objectionable, better results being obtained by gentle work. After flowering the plants should be pruned, and stood in a cold house to harden before being put outside. About May all—with the exception of Roses and Cytisus—should be planted in the nursery. In places where forcing is carried on to a large extent it is preferable to grow shrubs for the purpose, and keep young plants growing to take the place of older ones, which deteriorate after several years' work. If taken good care of after flowering many will be good enough to force for several successive years, and with an occasional season's rest will last for a number of years. It is unwise to keep plants in pots all the year round; if this is done they will soon be worthless.—W. D.

EELWORM DESTRUCTION.

"THE clear remarks about soluble phenyle and its composition" (page 570), satisfactory as they may be to Mr. W. Dyke, give no idea of its chemical elements, and consequently furnish no data as to contained plant nutrition or otherwise. We are told, however, that it has "some theoretical manurial value, as it contains 1 per cent. of potash." What of the remaining 4 per cent. constituent of the softsoap? And what becomes of the "nitrogen in creosote" when treated with the 5 per cent. of caustic soda? Is it not made suitable for plant nutrition? Let the answer be clear and supported by practice.

So much for the "theoretical" as compared with the practical manurial value of soluble phenyle. In the latter respect Miss E. A. Ormerod first notified the fact, if I remember rightly, in 1878, when alluding to the destruction of Carrot fly maggot, or larvæ of *Psila rosæ*, as follows:—"Copious watering, with an occasional application of dilute soluble phenyle, stopped the attack, and threw the Carrots into vigorous growth." The creosote must have yielded its nitrogen, and the whole soluble article speedily converted into plant food. On those grounds, and the verifications of experience, soluble phenyle was advised as giving "value for outlay as a manure," and because, in practice, "it acts as a fertiliser." Truly, "there is something wrong somewhere."

In the second paragraph of Mr. W. Dyke's article (page 596) I am pleased to notice his acquiescing in the potency of lime and kainit as eelwormicides, and that he so highly approves of "boiling water" as to advise its use "to kill any eelworm living." But I must direct his attention to the statement in 1896 of Cucumber and Tomato root-knot eelworm being unknown, according to his dictum, as an outdoor infestation in this country, and of its succumbing when the soil was exposed to the weather for some time. In 1897, "any" eelworm may be in turf, but that he submitted last year was root-knot eelworm (*Heterodera radicolica*), not the blunt root-stem eelworm (*Tylenchus obtusus*), page 597.

I may also congratulate Mr. W. Dyke on withdrawing from the overshadowing wings of "authorities" and of "other persons' experiences," and giving us something for which he may himself be held responsible. Thus we get at the kainit and basic slag treatment—practically the same as the first and lime. But even then he does not see the difference between treating plantless soil left for weeks and that of plants in the heyday of growth. An ounce of kainit per gallon of water is as much as I have found Cucumber plants to bear without injury to the roots, and 2 ozs. per gallon of water a maximum dose for Tomatoes. What then becomes of the 12 ozs. of kainit to a gallon of water, and wherein exists the analogy? Try it, and then write.

Turu we now to "unkillable and mysterious" eelworm, for which "kainit and lime are the only palliatives recognised by scientific experts as of any practical use and application" (page 571). Very well, the any and all eelworms found in England live in its surface soil, there sustained by organic matter, either in a dead or living state. Taking into purview the whole surface area—arable, pasture, and other land, the average depth of the vegetable mould does not exceed 4 inches. This, treated with, in round figures, 4 ozs. of kainit per square yard, 7 lbs. per rod, 10 cwt. per acre, in the autumn or early in spring, when moist, but with a prospect of fair weather for a time, becomes freed from eelworm, contingent on its containing a fair proportion of lime. This, however, usually does not exist to a sufficient amount in the surface soil for the essential forming of chloride of lime, hence we must supply this in conjunction with the kainit, and ordinarily as much—4 ozs. per square yard, 7 lbs. per rod, 10 cwt. per acre.

By using basic cinder phosphate with the kainit instead of lime we get about 5 cwt. of the latter, which acts similarly to that specially prepared, and in most cases effectively in destroying eelworm. But in Nature, and still more in cultivation, the surface soil varies considerably in depth, hence no particular data can be given as applicable to all cases. The deduction, however, at which I have arrived, after several years' observations and experiments, is, that for eelworm infestation, the kainit should be used in the proportion of one to three of lime, or 1 oz. kainit and 3 ozs. lime per square yard to each 1 inch depth of rich vegetable, worked, or prepared soil. The former has 4 to 6 inches depth of soil, let them use 4 to 6 ozs. of kainit and 12 to 18 ozs. of lime per square yard. Double the amounts quoted will serve for land under spade or fork culture, the 8 to 12 inches depth of soil respectively, and when dealing with calcareous or light land, exercise discriminative judgment or "brains."

The chances of handling the £50,000 are thus extremely small, for nearly everything depends for success on the avoidance of cultural errors

and mistakes, and in apportioning the amounts of kainit and of lime as befits the diversities of soils and of the various requirements of different crops, thus rendering universal preventives and remedies practically inapplicable to all circumstances. However, there can be no reason but indifference why foreign growers should ease consumers of garden and farm produce in this country of the cash so much needed by the home growers. This I consider far more important in respect of prevention and remedy than eelworm destruction may be to foreign growers. The difference between a bogus £50,000 and a substantial £50,000,000 a year, worse than lost to British farmers and gardeners, is that of the shadow and the substance. Scientific men should be exact, and not indulge in random figures, and it is not less important that experimentalists should proceed with caution and exactitude.—G. ABBEY.

EELWORMS sometimes attack the roots of Cyclamen, causing them to swell abnormally, and having the effect of completely paralysing their action. For this reason the pans containing the seed, and the young plants later on, ought never to be placed in near proximity to Cucumbers, Tomatoes, or other plants, the roots of which are liable to be infested with this nematode. The remedy is Little's soluble phenyle, diluted freely, a wineglassful, or 2 ozs. as measured by an 8 oz. medicine bottle, proving sufficient for 3 gallons of water. This applied occasionally instead of clear water, proves destructive to the eelworm and stimulates rather than retards the growth of the plants.—W. IGGULDEN (*Journal of the Royal Horticultural Society*, December, 1897, page 270).

[Yes; there is evidently "something wrong somewhere," either in the material or its application. One person kills his plants with soluble phenyle; another does not, nor eelworm either, and so has done with it; a third, if not a fourth, has no belief in its manurial properties; and then comes the gardener with the largest experience as a cultivator of all of them (not including Mr. Abbey)—a grower of plants and produce for market, and closely watchful of his outlay and its returns, who finds investment in soluble phenyle profitable, inasmuch as it is "destructive to the eelworm and stimulates the growth" of his tender rooted Cyclamens. It is evident that Mr. Iggulden has found a "palliative other than kainit and lime," and we suspect he would hesitate to apply the eelworm-killing quantities of these to the Cyclamens which he grows so luxuriantly. The problem of one person killing plants and another curing them is still unsolved, and the less of bantering or boasting on either side the better.]

FORCING RHUBARB.

THE rich, luscious, and tender stalks of gently forced Rhubarb are greatly appreciated at the present time and during the next two or three months. Forcing in December is, under the best conditions, rather slow. The roots do not respond so readily to the stimulus of heat while the days are shortening, but now, the new year having come, and the days have commenced to lengthen, forcing becomes less and less difficult. A steady regular temperature of 55° to 65° proves quite strong enough to induce growth.

Rhubarb may be forced in any warm position, but the roots must be kept moist. In a warm but arid atmosphere it will be best to surround the roots with soil in addition to that adhering to them when dug up. With frequent watering and syringing of the crowns there will be enough moisture to incite the production of plenty of white fibrous roots with feeding root hairs. On the other hand, when the atmosphere is sufficiently moist and the temperature high enough, the roots will only require frequent syringings, supplemented by one or two good waterings as may appear necessary. Positions affording conditions of semi-darkness are best for forcing Rhubarb, but it will succeed in full darkness.

In selecting roots for forcing, let them be not less than two years old. Those which have grown vigorously and been undisturbed for several years are the best. Roots are generally considered to force better if lifted some time prior to taking in for forcing, leaving them exposed to cold weather and frost, which serves the purpose of effectually checking them, after which growth seems to recommence better. Secure the roots as large as possible, only reducing them to a portable size by cutting the large fleshy roots down with a sharp spade as they are dug up. A few taken in every fortnight will usually meet the demand.

The warmest and most favourable corners should be chosen for roots giving the earliest supplies. The later, needing less stimulation, may be accommodated where the heat is not strong. Failing the floor or under the staging of a warm house, a warm, dark cellar can be utilised, though possibly the temperature may not be sufficiently high for an early crop. Roots can be placed in boxes or tubs and covered with others of the same size inverted. The advantage of these portable receptacles are that they can be placed in positions where bottom heat is available, as, for instance, over hot-water pipes, or in their immediate vicinity. Always, in these cases, surround the roots with soil, so that constant moisture is present about them, and not evaporated as soon as given. In March a number of roots in the open ground may be covered with inverted tubs, or large, deep drain pipes. In this manner an early supply of delicious, well coloured stalks may be secured before the first natural supplies from the open are ready.

Rhubarb can also be forced early without lifting, provided fermenting material can be obtained. The crowns should first be covered with boxes or tubs, having moveable tops for readiness in gaining access to the produce. Round these pack the fermenting material, which may consist of equal parts of stable manure and leaves. Carry the material over

the tops of the receptacles, but not to any great depth. Should fermentation be too rapid steady the heat by treading the material well, or reducing the height of the heap. It is very important that the forcing should be steady, or the stalks will be of bad flavour and colour. Hawke's Champagne and Early Red are the best for early forcing, and Victoria for later.

After being lifted and forced Rhubarb roots are not worth replanting, and the stock must be kept up by lifting and dividing unforced roots, deeply digging and well manuring the ground before doing so. Plant 3 feet apart every way before growth commences.—E. D. S.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

WE are requested to state that Arthur W. Sutton, Esq., of Reading, will preside at the annual friendly supper of members and friends of this Institution to be held at Simpson's, 101, Strand, London, on January 20th, at 6 P.M., after the annual meeting and election, which will take place on the same date and at the same place at 3 P.M. Friends who are desirous of being present at the supper should intimate their intention to the Secretary, Mr. George J. Ingram, 50, Parliament Street, S.W.

We have pleasure in announcing that his Grace the Duke of Portland has kindly promised to preside at the sixtieth annual festival dinner of the Institution, to be held, it is hoped, in June next; but the date is not yet fixed.

RECEIVING recently my voting paper for the Gardeners' Royal Benevolent Institution, I was struck by the number of applicants (forty-four) for the pension, and that nine only can be placed on the pension list. To many it must mean years of waiting. I cannot help feeling that the Institution does not receive the support from gardeners that it deserves. I am very forcibly reminded of the wisdom of becoming a member of the Institution by looking over the names of the ten candidates who are recommended for the pension in compliance with the rules.

It was my privilege to serve under one of the candidates many years ago. Little did we then expect what was in store for the grand old place which had sheltered royalty and numbered among its visitors some of the highest in the land. Depression came, reduction took place, eventually the place was let. The old chief still held on, and now I find he is about to be placed on the pension list, and most heartily do I wish he may long enjoy it. I would urge most strongly my brethren of the craft to at once become members of the Institution, and so make some provision for the uncertain future.—ALFRED HOPKINS.

TUBEROSE CULTURE.

THE Tuberose is one of the most beautiful of all our bulbous plants, and one which should find a place in every greenhouse. The tubers are cheap in price and of most easy culture, and yet it is rarely one sees them well grown by amateurs. Many have told me that they have tried, but have always been unsuccessful. This doubtless was due to the treatment given the tubers, as with proper culture no one should fail in being successful. Failures, of course, do occur in growing Tuberose, as with everything, and in such a manner as to render it impossible to state the cause. As the present is a good time to pot the tubers, a few remarks on a method of procedure which has been found by myself, as well as many others, to be an excellent one to follow, may prove acceptable to many readers.

The bulbs should be potted firmly in 5-inch or 6-inch pots, in a compost consisting of sandy loam and leaf mould in equal parts, but any good soil will grow them quite well. One of the most important points to be considered is efficient drainage. This matter, I am inclined to think, is very often attended to in a careless manner, which cannot possibly be conducive to good health and success with this or any other plant. After having been potted they may be plunged in a frame from which frost is excluded. Let the pots remain there until it is desired to start the plants into growth, when they may be introduced into any convenient place where a slight bottom heat can be given them. They will soon commence pushing up their leaves, which always appear considerably before the flower stems. During the time they are in the frame little or no water should be given, but when they are growing freely ample supplies must be afforded, both of pure water and of liquid manure, the latter made of cow manure suiting them best.

When in flower they may be placed in a room, window, or the greenhouse, but in the event of their being used for the ornamentation of rooms it must be borne in mind that their perfume is very powerful, and that where one would scent a room delightfully half a dozen would give off a perfume which would be oppressive. This is more especially the case at night, when, like the Night-scented Stock (*Matthiola bicornis*), the scent is far more powerful than it is in the daytime.

Tuberose may also be grown with success in the garden, but the position chosen for them must be naturally warm and sheltered. In cold wet soils they are almost certain to perish. In planting out of doors, which should not be done until the weather is very much warmer, it is a good plan to take out a moderate depth of soil, substituting in place of it some thoroughly decomposed manure. Over this place the soil, the same as is advised for pot culture, in which the bulbs may be planted. Tuberose planted in the open ground in May, in the manner advised, will afford a good quantity of flowers during September.

For use in bouquets, buttonholes, and sprays the chaste white flowers are unexcelled, rivalling the Rose, Lily of the Valley, Camellia, and the fragrant Gardenia in popularity. The bulbs in potting, I have omitted to say, should not be entirely covered with the soil, but should be left with about half an inch of the apex protruding.—H. R.

SOMETHING LIKE A GRAPE.

THE berry (fig. 4, A) will tickle Mr. Iggulden's fancy, as it is very like a Tomato, and interest many readers of the *Journal of Horticulture*. I believe it is the largest Grape on record, being exactly $5\frac{1}{4}$ inches in circumference. Though what the sender, "A. S.," calls a "malformed berry," according to current acceptation of "standard" form, it was perfect, without spot or blemish, black as jet in colour, thick in flesh, juicy, and richly flavoured; finer were never seen of Black Hamburg, or, perhaps, any other Grape.

In looking for something like it I found a figure of a similar berry in Loudon's "Gardeners' Magazine" for October, 1835 (page 546), which measured $4\frac{1}{2}$ inches in circumference, and there shown in both vertical and horizontal sections. This berry was grown in a Pine stove, Vine planted outside, the grower (Mr. Thomas Forrest, Kimmel Park, Cheshire) stating that he frequently had the Black Hamburgs 4 to $4\frac{1}{2}$ lbs. per bunch, which certainly was not bad for Vines under the rafters of a Pine stove.

By giving a vertical section to the berry just alluded to it is seen to be "twin," with nine seeds, as shown in the horizontal section. "A. S.'s" is a triple (B), but only contained six perfect seeds, one ovule (a) being abortive. This horizontal section shows the arrangement of the seeds around the central axis; but still more clearly defined in the vertical section (C), the central and the side seeds corresponding to the ovaries, the berry being really a sort of three in one, thus beating the Black Hamburg berry of sixty-two years ago in Loudon's "Gardeners' Magazine."

Why some flowers have a varying number of ovaries nobody knows, but they come sometimes, and the fruit deserves tracing for the benefit of future generations—at least, such is the view of—G. ABBEY.

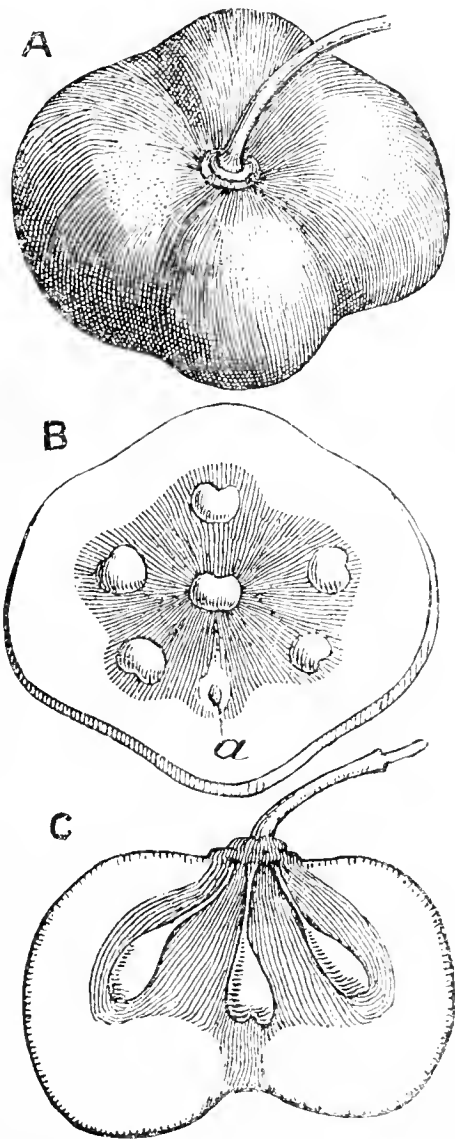


FIG. 4.—BERRY OF BLACK HAMBURG GRAPE.

References.—A, general appearance. B, horizontal section; a, abortive ovule. C, vertical section. (All natural size.)

THE AWARDED OF EQUAL PRIZES.

ONCE again the question of awarding equal prizes at horticultural shows has cropped up. Having read with interest "Sadoc's" opinion on page 597, I must confess I do not agree with him when he states that he does not think it possible for two exhibits of a similar nature to be so arranged that the merits of each are absolutely equal. I say, Point them how you like, if done impartially it is possible for the total to be the same; and if so, is it not the fairer way to place them equal? May I ask, Is it not just as fair to award equal prizes at horticultural shows, as is often done by judges in racing and all kinds of sports?

I notice "Sadoc" refers especially to the awarding of equal first prizes to a group of chrysanthemums and foliage plants at the late York Show. As I was one of the judges on that occasion, I can assure him we spent much time on the two groups in question, and every particular in which he alludes to was thoroughly considered by the six judges, some of whom were quite strangers to me; but I take it for granted they were all judges of the highest ability, or they would not have been selected for such an important show as York, probably one of the very best held in the North. It is true we were equally divided, three being for one and three for the other. At my suggestion a seventh expert was called in. He most carefully went into every detail, and he came to the conclusion that the two groups were so equal in merit that he could not conscientiously separate them. Now I contend that in such a case as this it was the bounden duty in fairness to both exhibitors to award equal prizes.—E. BECKETT, Aldenham House Gardens, Elstree, Herts.

BRIEF NOTES ON ALPINE FLOWERS.

(Continued from page 524, last vol.)

RHODODENDRON HIRSUTUM.

THE hairy "Alpine Rose" is a plant of very considerable beauty and value for the rock garden. Its hardiness is indisputable. With its companion *R. ferrugineum*, spoken of on page 524, it is one of the last of the shrubby plants to be left behind as the chains of the Alps and Apennines are ascended. In its native habitats it flowers in July and August, and presents a beautiful picture, where it grows among the rocks. Here it blooms from May to July. The flowers are scarlet or bright rose, arranged in umbellate corymbs, and with funnel-shaped corollas. The leaves are elliptical, with the edges ciliated, crenated, and marked with ferruginous dots on the under surface. It grows from 1 to 2 feet high. It has been introduced for 340 years, so ought to be more frequently seen than it is now. It grows on calcareous rocks, so that the presence of lime in the soil is not detrimental to its welfare. There is a pretty white variety known as *R. h. album*.

R. LAPPONICUM.

This Lapland Rhododendron is one of which I have no experience, and I should be glad to have some further information about it. I cannot recollect having met with it anywhere. It is described as growing 6 inches high, and as having open bell-shaped and dotted violet-purple flowers, only a few being produced in an umbel. The leaves are elliptical, half an inch long, persistent and dotted with rusty scales. I understand it is figured in the "Botanical Magazine," t. 3106. For this information I am indebted to the "Dictionary of Gardening."

R. MYRTIFOLIUM.

This is, by some, considered a variety of the well known *R. ponticum*. The leaves are smaller, being about 2 inches in length, and the plant rather dwarfer. The flowers are purple. It is not so well adapted for the rock garden of limited dimensions as a number of others, and is more suitable for the shrubbery. It is, however, mentioned for the information of those thinking of furnishing extensive and boldly constructed rockeries.

R. PRÆCOX.

This is a hybrid Rhododendron of very great beauty when in bloom. It is sometimes in full flower before the snow has gone for the season, and one is surprised that its beautiful peach-coloured flowers are hardy enough to withstand the cold weather of the time. It covers itself with flowers, which are of good size and of the most delicate beauty. Its weak point is the paucity of foliage and its partly deciduous habit. It grows from 1 to 1½ foot high, and is one which is a general favourite with all who have seen it in growth. The flowers are, in their general appearance, like those of some of the Azaleas, and many people who have not seen it before conclude that it is a member of that genus.

R. WILSONI.

This is another hybrid plant, its parentage being *R. ciliatum* and *R. glaucum*. It is to some extent intermediate between its parents in appearance, having, as has been said by a competent writer, "the foliage of the former without the hairs," and "is destitute of the glaucous hue of the latter." The flowers are rose colour. So far as the writer has been able to learn by comparison of experience, this hybrid is not quite so hardy as some of the other Rhododendrons already named, and it should therefore have a sheltered position. *R. Wilsoni* is by some said to be one of the parents of *R. præcox*.

R. DAHURICUM.

The Dahurian Rhododendron is practically a deciduous plant, and is therefore not inserted in the same position as the others. It is a good hardy species for large rock gardens, although its almost entirely deciduous habit makes it less valuable in winter. It is of erect habit, and grows about 3 feet high. *R. dahuricum* comes into flower in March, and has pretty rose blooms produced from one to three at the ends of the branches. It was introduced in 1780, and has often been figured and described.

RHODOTHAMNUS CHAMÆCISTUS.

This little shrub is also known as Rhododendron Chamæcistus, and I have, therefore, thought it better to mention it now. It is a choice little shrub, growing about 6 inches high, and with pink flowers. The leaves are what are known as elliptic-lanceolate, and are evergreen, with pointed hair at the edge. It is a remarkably difficult shrub to establish, and many plants are lost in endeavouring to induce it to grow in gardens. A mixture of loam, peat, and sand is to be preferred in which to grow it, and it may either be planted in limestone fissures of rockwork, or in beds devoted to dwarf shrubs. In the latter case, it should have its roots in contact with some calcareous matter, such as chalk or limestone.

CULTIVATION.

The Alpine Rhododendrons should be grown in soil containing a good admixture of peat. Two-thirds peat, a little loam, and the remainder sand make a suitable compost. They ought never to suffer from drought, but the opposite extreme of soil overcharged with water must be equally avoided. Some kinds require chalk or limestone, but to others it is most obnoxious. *R. hirsutum* and *Rhodothamnus Chamæcistus* belong to the former class. *R. ferrugineum* should be planted in silicious rocks. A partially shaded situation prolongs the bloom, but they do quite well in

full sun. Where planted in a position exposed to strong sunshine it is advisable to place some light material, such as cocoa-nut fibre or leaf mould, over the soil about the plants, in order that the small fibrous roots near the surface may not be destroyed. The same result may easily be attained in rock gardens by the arrangement of the stones.

As already mentioned, the Alpine Rhododendrons generally lift with a ball of earth attached, and can thus be removed at almost any time. Spring is, however, the most satisfactory season to plant them.

Rhododendrons are increased by seeds, layers, grafting, and cuttings. The ordinary grower of alpine flowers is not likely to stand in need of directions for dealing with these methods of increase, and those who wish will find full information in standard works of garden practice. It may, however, be said that there is still a field for a hybridiser who would devote his operations to the dwarfer habited Rhododendrons.—ALPINUS.

(To be continued.)

KEEPING PEARS.

IT is very evident, from what was published last week on page 621, that Pears need two forms of preservation. One is from birds and insects in the autumn, the other suitable stores to winter them in. When "W. S." referred to the trouble he had with Doyenné du Comice Pears because of the injuries done to them by insects and birds, he was but giving expression to the trouble that seems to beset everyone who grows Pears, and especially good ones. Insects and birds are no respecters of growers; but they have particular fondness for the best flavoured and sweetest fruits. That partiality, whilst it indicates good judgment, affords no palliation of their depredations.

But are good class fruits—whether on bush, pyramid, espalier, or cordon trees on or off walls—not worth some special protection? What, for instance, would be the cost of a few hundreds, or even a thousand, small cotton bags, each of about a pint capacity, made with a string run through a hem at the top, so that when the bags were slipped on the strings could be drawn tight round the stems, and thus prevent even insect access to the fruits? No doubt the fruits would suffer something in colour, or rather the lack of it; but it would be great repayment to be able to save the finest in that way. The work also from the first could be better done by the pliable fingers of women than of men, and thus the garden staff would be saved from a fresh duty. Can anyone else make any simpler suggestion? Bags of this nature washed after done with, and put away dry and clean, could be similarly utilised for two years at least.

Some precaution of this kind seems to be even more needful when Pears are scarce. Then there is the question, also slightly raised by "W. S.," and partly by the Editor, as to the best form of store in which to keep Pears, and, indeed, Apples too. Ordinary wooden or brick structures with board floors and slated or tiled roofs are of the worst for this purpose. My ideal fruit house has always been a span with walls of solid concrete 9 inches thick and 3 feet above the ground, and a thatched roof of reed or straw fully 12 inches thick; also built amidst a wood or where tall trees overhang, because there so little influenced by changes of temperature. A door of stout wood should be at each end, so that when the temperature outside was equable and cool without being frosty both doors could be occasionally opened to secure ventilation and change of air. These doors might be padded with mats and hay in very hard weather, also the eaves might be stuffed with straw or shavings if desired.

Very little of the hardest of frost would penetrate into such a house. The inner path of the house, 2 feet wide, should be 2 feet below the ground level and the floor of soil. Of course, if needed the site should be well drained. Mere trellises 18 inches apart on other side would do for shelves, as all the fruits should be as gathered laid very carefully into trays, say 3 feet long and 2 feet wide. These as filled should be placed close together on the trellises, and then if unusually hard weather set in those trays on the top trellises could be lifted down, and be laid on to the lower ones, and all be securely covered up. The temperature should range from 36° to 45°, as a very even medium. Variableness and sweating are most harmful to fruits. Whilst we have shown that we can grow the finest of fruits, our methods of keeping are open to much improvement.—A. D.

"W. S.'s, Wiltshire" remarks on Pears (page 621) are illustrative of the general need of useful information, although advice, in order to be effectual, can only be given on particular lines if no essential details are omitted by inquirers, including situation and elevation of the plantation.

One of the most adverse influences on crops is the destruction of blossoms by late spring frosts, especially affecting Pears on account of their flowering before Apples. Private gardens on low levels are likely to be sorely tried in that respect without much chance of a cure, though mitigation of the evil may not be impossible. Fruit plantations of more ambition, either private or market garden property, should be rigidly placed in favoured localities easily determined and confirmed as such. Systematic observations, if published, of the advent of irregular frosts like those in late spring would prove that the whole question turns on elevation of site, and instances in point could doubtless be adduced by some of your subscribers of the thermometer descending to a minimum overnight of say 26° Fahr. on a low level, with nearer 20° on grass, with hoar frost destroying every chance of a Pear crop, and simultaneously another Pear plantation on ground higher by 100 or 200 feet escape frost entirely with a minimum of 36°, a difference of 10°.

This example will probably be found to apply as an average one,

assuming the low site relatively in a vale with dew developing heavily and turning into white frost, and the latter on a gentle hill in the rear where, in the absence of dew, the temperature might descend to 32° or even 30°, if not lower, without leading to destruction of blossoms. Conclusions about sites on intermediate elevations can readily be drawn. Of course, shelter from the cold quarters and a gentle slope between S.E. and S.W. would be always an extra safeguard, and should be strictly adhered to, or dry cold winds might accomplish what frost failed to do. If the exercise of judgment as to selection of sites in relation to Apple and Pear and Plum plantations, with correct management, is established in this country importations will become superfluous as to bulk. It is only another case of the egg of Columbus.

A supply of lime to the stations of Pear trees has been found by observers to be productive of much benefit to fruitfulness, proving the insufficiency of that mineral in the natural soil, where its action is to render latent plant food accessible to plant action, besides absorbing superfluous humidity, and thus assisting towards the improvement of fruit and its maturity.

The classing of quality of the various Pears named in his first paragraph by your correspondent agrees absolutely with my own observations. As to Doyenné du Comice, I do not, however, find it unsatisfactory on pyramids on the Quince, and evidently the host of depredators mentioned know which Pear is the best. It produces, however, better fruit upon a wall or as an espalier. Glou Morceau ought to be satisfactory on the Quince against a wall, and also bush trained, anyhow near London. It strikes me a great omission of a first quality Pear would be made by the absence of Thompson's from any selection. I found the fruit at its best six weeks ago from a wall tree due south.

As to later sorts lasting from January to March, the best with me are Marie Benoist, Prince Napoleon, Olivier de Serres, and Doyenné d'Alençon; also the new fine French Pear Le Lectier. If more are yet wanted, Nouvelle, Fulvie, and Zéphirin Grégoire are excellent, and all are best from, and some in need of, a wall. If a situation and soil of unusual warmth be available Beurré Bosc for November and Chaumontel from Christmas are among our choicest Pears.—H. H. R., *Forest Hill*.

THE YOUNG GARDENERS' DOMAIN.

ONIONS FOR EXHIBITION.

I HAVE found the best method of growing Onions for exhibition purposes in the northern counties is the following:—About the first week in January sow the seeds thinly in an ordinary seed pan, well drained and filled to within half an inch of the top with finely sifted soil. Place the pan in a slight bottom heat until the plants are about 1½ inch high, then prick out into boxes (or better still a slightly heated pit or frame) 3 inches apart. The soil should consist of two parts of loam, one part of leaf mould, and one part of old Mushroom bed refuse, with a liberal addition of wood ashes, or, failing those, finely sifted ashes from the stokehole fires. Here they must remain, gradually hardening until the first or second week in May.

Prior to this have the ground prepared for their reception in the following manner. Give a good coating of half-decayed manure, and dig well in. If the soil is of a clayey nature ashes applied when digging will be of great benefit. If Parsley can be sown on the ground the first week in February it will act as a deterrent against the Onion fly. This having been done, and the ground made fairly firm, choose if possible a dull, moist day in the first or second week in May for planting. Lift with a good ball of soil and plant firmly in rows a foot apart and 10 inches from plant to plant, and keep moist until well started. During the growing season applications of liquid manure occasionally are of great benefit, and as there is such a variety of excellent artificial as well as animal manures, it is advisable not to use the same stimulant twice in succession. Also keep the soil well stirred amongst the plants. The varieties I have found best for exhibition are Ailsa Craig, Banbury Improved, and Excelsior.—J. C., *Lancashire*.

EARLY FORCING PEACHES AND NECTARINES.

EITHER December or early in January is the usual time for starting first early houses of these highly appreciated fruits. After the houses and trees have been thoroughly cleansed, the pruning having been previously done, we commence the training of the trees. This must be carried out systematically, leaving sufficient room between each shoot for the summer's growth to be tied in without overcrowding. A start may be made with a temperature of 40° to 45°. If the roots are near the surface it may be advisable to apply a top-dressing, and I have observed that a sprinkling of lime and about 2 or 3 inches of loam, with which has been previously mixed a small quantity of mortar rubbish, have been followed by markedly good results. Should the trees be in a weakly state, add a few half-inch bones and wood ashes. Make as firm as possible, and give the borders a thorough watering. Syringe the trees freely in favourable weather and pay the greatest care to ventilation, being governed in this by the state of the external air. In my opinion it is advisable to allow the temperature to increase a little rather than admit a cold draught, which is almost sure to give a check to early forced trees. Commence with the top ventilation in the early morning, and increase it with the temperature, and close before the sun leaves the houses in the afternoon. In about a fortnight or three weeks increase the temperature a few degrees until 50° by night is reached, which I think sufficient for the flowering stage. Should the flower buds be too numerous, it is advisable to thin them, leaving the strongest and best.

During the flowering season a drier atmosphere must be maintained, and it is frequently advisable to assist the distribution of the pollen about midday by one of the several efficient methods. A constant circulation of air is essential when the plants are in flower. As soon as the petals fall a gentle syringing with tepid water will greatly assist the embryo fruit to swell. Disbudding must be done at intervals of a few days, as there will then be less danger in giving the trees a check. First rub off with finger or thumb all "breast shoots," then commence at the leader of each branch, leaving the first shoot, and remove about half of the weakest growths except the two at the base. At the final disbudding leave only the leader and one at the base of each growth bearing fruit. If that be rather long one intermediate growth may also remain. Tie each growth as soon as long enough.

As the fruit commences to swell raise the temperature gradually to 60°, and later on 65° by night, with 5° to 10° higher in the day. Thin the fruit freely, taking the state of the trees into consideration. An occasional top-dressing of artificial manure may be given before watering if the trees require it, while liquid manure is also beneficial to them if they are too weak to support the fruit. Keep a sharp look out for green fly and red spider, which must be promptly exterminated either by syringing or fumigation, or the pests will quickly ruin the young growths, and so spoil the next season's crop of fruit. The trees must never be allowed to suffer for want of water, or bud dropping will be the result. At the same time the border should never be sodden, or injury to the roots will quickly follow. As the fruit commences to colour it must be exposed to the sun, which is essential to obtain the best flavour, and as it begins to show signs of ripening admit air more freely day and night. When the fruit has been gathered the next thing is to ripen the wood thoroughly by leaving open all the ventilators both day and night, and water the borders as often as required until they lose all their foliage.—J. F. D., *Yorks*.



FRUIT FORCING.

Cherry House.—The trees in the house started in December are fairly on the move, and the day temperature must be kept at 50° to 55°. If the days are bright air should be admitted, but only to the extent of keeping the temperature from rising above 65°, maintaining it from sun heat at 60° to 65°, admitting a little air at 50°, more at 55°, above which a free circulation of air must be allowed, and when the temperature declines to 55° close the house for the day. The night temperature should still be kept at 40° to 45° artificially. Syringe the trees in the morning and early afternoon if the weather is bright, but if the weather be dull it will suffice if the borders and other surfaces are damped whenever they become dry. Examine the borders, supply water if necessary, moistening them thoroughly, the water not being less or much higher in temperature than that of the house. Trees in pots—the most desirable mode of forcing Cherries—must be well supplied with water, repeating the supplies as necessary to insure thorough moisture in the soil.

Cucumbers.—Take care to husband the sun heat, giving a little ventilation if the weather be mild and calm in the early part of the day, and close early in the afternoon, or shortly after midday, damping the house at the same time. Sprinkle the floors on fine mornings, and syringe the plants lightly, thus discountenancing red spider, and to some extent holding the pest in check. Supply weak liquid manure to plants in free growth, and to those not showing signs of growing freely sprinkle a little superphosphate and soot on the soil, and use tepid water only until the growth becomes free. To encourage surface roots a top-dressing should be given of turfy loam from the size of a nut to an egg, intermixed with a fourth of sweetened horse droppings, having it previously warmed to the temperature of the house, and sprinkle on this a handful of some approved fertiliser. Maintain the night temperature at 65°, a few degrees less in severe weather and a few more in mild, 70° to 75° by day, and 85° to 90° with sun heat, keeping the bottom heat steady between 80° minimum and 90° maximum.

Where winter Cucumbers are not grown plants for the early supply of fruit should now be prepared, sowing the seeds singly in 3-inch pots half-filled with soil, so as to leave space for top-dressing when required. Plunge the pots in a brisk bottom heat near the glass, or place on shelves and cover with a pane of glass, removing as soon as the seedlings are just clear of the soil. These plants will be available in about a month for planting in houses, pits, or frames, and will supply fruit during the month of April. Where convenience for raising the plants for planting in frames does not exist seed should be sown in pots placed in a hotbed as advised under Melons.

Melons.—To have ripe fruit late in April or early in May seeds must now be sown singly in 3-inch pots, leaving room in the pots for top-dressing. Plunge in a bottom heat of 80° to 90° near the glass, or cover the pots with bits of glass and remove when the plants appear; thus plants can be raised on shelves in any structure having a temperature of 65° to 75° by artificial means. As soon as the plants have unfolded the first leaves top-dress the soil, keep them as near the glass as possible without touching so as to prevent a weakly growth.

Hotbeds.—In small or moderate-sized establishments, where there are no light well-heated structures for raising Cucumber and Melon plants or others from seeds and for rooting cuttings, a hotbed is very important. The materials may consist two parts of leaves and one part of stable litter, well mixed and thrown into a heap, damping if necessary, and turning over twice, the first time when the materials are warmed through, and again in the course of a week. This sweetens the material, rendering it fit for making up. Choose a dry site and in front of a wall or hedge to the north, and if similar but low on the east-west the force of winds will be much modified. Make the bed 6 inches larger than the frame every way, but as it is difficult to carry up the sides and ends quite perpendicular, let the base be 1 foot greater than the box every way, building the bed so that it will have about 6 inches to spare all round the frame. Put the materials together as evenly as practicable, and beat them down as the work proceeds, making the bed about one-third higher than the intended height, the bed at this season needing to be about 6 feet high at the back and 5 feet in the front.

In a week the bed will have settled down, then level the surface, return the frame, and put in sufficient fermenting material to make the back of the frame correspond in depth with the front, and over this 4 to 6 inches of leaves or other light material for plunging the pots in, whether of seeds or cuttings. We find it an excellent practice to form a cavity inside the frame, in order to allow the plants the benefit of top heat from linings after that from the bed is declining. Due preparation must be made of fermenting material for linings and hotbeds for the plants as they become fit for planting in the fruiting beds.

Pines.—When it is found that plants under the ordinary régime will not fruit sufficiently early for particular purpose, a selection must be made from the successional plants, choosing those which appear likely to show fruit quickly, these being readily distinguished by the high centres or hearts and stoutness at the upper part of the plant stem, and bringing them together into a light house, where they can have the benefit of more heat. Plunge the pots in a bed standing regularly at a temperature of 90° to 95° at the base of the pots. If the plants are in the least dry, water them with liquid manure copiously at the same temperature as the bed. Maintain the top heat at 65° to 70° at night, with 5° more from fire heat by day, advancing to 85° or 90° from sun heat. Keep the atmosphere about the plants in a genial and invigorating condition by damping the paths and sides of the beds as they become dry, and lightly syringing as may be necessary.

Peaches and Nectarines.—*Earliest Forced House.*—The trees started in December will require a night temperature of 50° to 55°, the latter only when the nights are mild, and as a maximum by day when the sky is overcast, 65° by day from sun heat, and if the air be mild a few more degrees may be allowed. Cease syringing the trees directly the anthers show clear of the corollas, but damp the floor and border on bright days in the morning and afternoon. Lose no opportunity of ventilating freely when external conditions are favourable, and when the pollen is sufficiently advanced choose the warmest and driest part of the day for aiding its distribution by shaking the trellis or tree, or taking a camel's-hair brush, applying the pollen to the stigmas. If there be a deficiency of pollen of any variety, some should be taken from those that afford it freely and applied to the pistils; a rabbit's tail tied to a small stick holds the pollen well, and allows the cross-fertilisation to be readily effected. Inside borders must not be neglected for water; protect outside ones with leaves and litter, just sufficient covering to exclude frost, but not so thick as to perceptibly ferment.

Second Early House.—This, the first in most establishments, and planted with such varieties as Alexander and Early Louise Peaches and Cardinal and Advance Nectarines, must be started to give fruit early in May; or if such varieties as Hale's Early, Dr. Hogg, Stirling Castle, Royal George, Grosse Mignonne, or Dymond Peaches; Early Rivers, Lord Napier, Stanwick Elruge, and Rivers' Orange or Humboldt Nectarines, to give ripe fruit at the end of May forward, must be started at once. Damp the trees in the morning and early afternoon, turning on the heat in the morning, so as to raise and maintain through the day a temperature of 50°, taking care that it does not exceed that heat by artificial means, allowing the temperature to rise to 65° with sun heat, and free ventilation from 50°. When the buds swell maintain a night temperature of 40° to 45°, up to then merely excluding frost.

THE KITCHEN GARDEN.

Forcing Kidney Beans.—Little progress is made by Kidney Beans during the dull, cold days of midwinter; but if forcing is commenced now, a remunerative and much appreciated crop should result. These early plants succeed best in 8-inch and 9-inch pots. Fill well-drained pots to within 2 inches of the rim with moderately rich loamy soil, making this firm; sow nine or ten seeds in each, and cover with soil. If no other bottom heat is available, arrange the pots on the hot-water pipes, this causing the seed to germinate quickly and strongly. Before the plants become drawn and spindly, raise them well up to the light, in a brisk heat of 65° by night to 70° and 75° in the daytime. Thin out to not more than six plants in a pot, and lightly support with Birch spray or stakes and raffia; keep the roots well supplied with water and liquid manure, and syringe freely soon after midday when the weather is clear.

Cauliflower.—If there is an insufficiency of plants of early and second early varieties saved from the autumn sowing, the requisite number should be raised now. It is also advisable to be prepared for the possible loss of late Broccoli plants. Sturdy plants of Dwarf Forcing or Early Snowball, established in small pots and duly turned out into a rich bed of soil in a pit or frame, would produce neat little hearts well ahead of

plants in the open, or in time to obviate any difficulty that might accrue owing to loss of late Broccoli. Sow the seeds thinly in pans, and place in gentle heat to germinate. Raise the seedlings well up to the glass to keep them sturdy, taking care not to break them down by reckless syringing. When well into rough leaf transfer to a warm greenhouse shelf, a fortnight or three weeks later potting them singly into 3-inch pots.

Lettuce.—The mild autumn and early winter months have had the effect of stimulating a stronger and later growth of plants than desirable, so that there is every likelihood of small plants being scarce this spring. The way out of this difficulty is to sow seeds of such quick hearting sorts as Early Paris Market, Golden Queen, and Commodore Nutt now thinly in pans or boxes, and otherwise treating as advised in the case of early Cauliflower. A portion of the plants may, when strong enough, be pricked out in a shallow frame or pot on a bed of soil over a mild hotbed, where, if properly attended to, they will heart in early, paying well for gentle forcing. The rest can be hardened and duly planted at the foot of sunny walls or on warm borders.

Mustard and Cress.—A regular supply of this quickly grown, popular, small salading ought where possible to be forthcoming now. It is well to sow it in separate boxes, Mustard frequently growing and ageing the more rapidly. Fresh rich soil ought always to be used. Make the surface of soil firm, moisten prior to sowing the seed thickly on the surface, press it in evenly, and scarcely cover the Mustard only with fine soil. If placed in a moist atmosphere and brisk heat, and further heavily shaded, not removing the covering till the salading is 1½ inch high, it will be possible to cut it with long, clean, well blanched stems. The less watering needed for the first week the better. Transfer to cooler quarters to keep it tender as long as possible, and sow more seed every week.

Tomatoes.—In the event of no plants having been raised in the autumn, and early crops are desired, seeds should be sown at once, giving the preference to known free-setting early ripening varieties. Sow the seeds thinly in pans of light soil, and place in a brisk heat to germinate. Soon after the seedlings are up raise the pans to near the glass, keeping them there till they have formed a second pair of leaves other than their seed leaves. Thus treated a number of sturdy plants will soon be ready for placing singly in small pots. Being well apart they can be lifted out of the pans with the point of a label, all having a little soil about the roots, and not receiving any noticeable check; whereas others thickly raised, and which have to be shaken clear of each other, are slow in recovering from the move. If kept somewhat closer and warmer for a few days to hasten root action, the plants should be returned to a sunnier lighter position in time to keep them sturdy. Tomato plants ought to be placed in their fruiting quarters before they become root-bound and stunted in growth.

Exhausted Mushroom Beds.—Mushroom beds in heated structures that have produced a crop will frequently do good service a second time if properly treated. No old stumps ought to have been left in to decay and spread a destructive fungoid growth all round, but all should be twisted out with the Mushrooms. In the case of large clumps, if these are removed bodily a large hole is formed, which must be filled with fresh loam. If the beds have been on the dry side a thorough soaking with either clear liquid manure, or, better still, water well impregnated with salt (¾-oz. to the gallon of water), in a milkwarm state in either case, may lead to a capital second crop.

PLANT HOUSES.

The Conservatory.—However well plants may be grown or effectively arranged this structure cannot be thoroughly enjoyed unless the surroundings are perfectly clean, therefore the stages, glass, and woodwork should be washed occasionally. The house is now gay with dwarf Poinsettias, Euphorbias, Centropogon Lucyanus, Primulas, Cyclamens, Cinerarias, Heaths, Solanums, Rhododendrons, and many bulbs.

Epacris.—These may be brought forward into bloom by introducing them into gentle heat. Their slender stems crowded with flowers are charming when arranged to stand above plants of a dwarf compact habit. At no season are these plants more highly appreciated or display their beauty to greater advantage than during this and the following month. Their flowers last much longer now than when the sun has gained considerable power. This is not the only advantage, for the plants start again much earlier into growth, and therefore have a long season before them, and every chance of the growths being thoroughly ripened, without which the plants cannot be expected to flower profusely.

Tulips.—The early Tulips that were placed thickly together in pans and boxes, and are now being forced, should, as they show the colour of their flowers, be lifted out. By so doing even pots or pans can be made up, and the flowers will last equally as long as if they were established. Early in the season it is difficult to have even pots of bloom unless this course is followed, for the bulbs flower very irregularly. Keep them well watered after they are placed in pots. Single crowns of Lily of the Valley can be treated in the same way, and then full pots of flowering spikes are certain. The last, if forced in strong heat, must be gradually hardened before being cut or taken into rooms or the conservatory, and it will be found that they will last nearly twice the length of time that would be the case if cut direct or taken into rooms from a close, warm house or frame.

Fuchsias.—Young plants rooted towards the end of August, and kept in small pots, may now be placed in 5-inch pots in a compost of loam, one-third leaf mould, one-seventh decayed manure and sand. Arrange

the plants near the glass, and maintain a temperature of 50° to 55°. Ventilate on favourable occasions after the young plants are established and have commenced growth. Old plants that have started into growth may have the roots reduced to at least one-third, and be repotted in the compost advised above. The plants can be placed in pots one size less until they are in active growth, when they can be transferred to their largest size. If careful watering can be insured until the plants are established they may be potted at once in a large size.

Cannas.—These are very useful in 5 and 6-inch pots for association in groups in the dwelling house or conservatory. Clumps that have rested under the stage of a cool house for some time may be started in the gentle warmth of a vinery or Peach house. Directly they commence growth divide them and pot singly, for they can be used to greater advantage in most arrangements than when a number of shoots are allowed to grow together. These plants will do well in any moderately rich soil.

Solanums.—Where cuttings were rooted in August and have been kept in store pots they may be placed singly in 2-inch pots; if they have been kept in thumbs they can now be transferred to 3-inch pots. Good plants well set with berries can be produced from cuttings struck early in the season, but better result from autumn striking. When autumn plants have not been provided cuttings should be rooted as early as possible and pushed forward in gentle warmth until the plants are ready for their final shift. Encourage young plants to grow after potting by keeping them in a temperature of 50° to 55°. Pinch the shoots at times to induce a branching habit. Use for a compost fibry loam, one-seventh of manure and sand.

Lantanas.—Place young plants now in 2 and 3-inch pots into 5-inch pots, and grow them in the compost advised for Solanums, and under the same treatment as Fuchsias.

Bouvardias.—Cut back plants that have been rested since they flowered, and introduce them into a temperature of 55° to 60°. Under these conditions they will soon commence growth and yield good cuttings. Those who favour raising the plants by portions of the roots may now cut up the roots of well rested plants into lengths of about half an inch. Place two or three of these in the centre of 2-inch pots filled with light sandy soil; the portions of roots should be covered with a quarter of an inch of fine soil. Place the pots in brisk heat, and be careful the soil does not become dry. If slight bottom heat can be given them all the better. Keep plants that have recently flowered rather dry at their roots for a time.



PROGRESS OF BEE-KEEPING.

WITH the advent of the new year it may be an advantage to compare the present with the past, and endeavour to find out, as far as it is possible, what advance has been made of late years in bee-keeping. That progress has to be chronicled there can be little doubt, although some districts have signally failed to make the headway that might have been expected. There have been various causes for this, the chief one being foul brood. This disease has devastated numerous colonies of bees in the South and West of England. It has been found the worst in outlying districts where bees have been kept from time immemorial in straw skeps.

It may be as well to remind bee-keepers that in all probability stocks that were affected with this disease in the autumn will have succumbed; and when this is the case, and they are in straw skeps, it will save further mischief if they are committed to the flames.

From other districts, and it is gratifying to know they are in the majority, great strides have been made during the past ten years. In every instance that has come under my notice it has been where the modern system, or moveable frame hives, has been worked for storing a surplus. If straw skeps have been in use it has been for supplying early swarms, and when worked in conjunction with frame hives they are a decided advantage.

Gardeners have not been slow to observe the benefits derived from bee-keeping, even when honey production is of secondary consideration, owing to the amount of good bees do in the fertilisation of the bloom. During the past ten years a great advance has been made in this branch alone, and it is now quite unusual to visit a garden in the provinces and not find a hive or two of bees.

In favourable districts throughout the country large apiaries have sprung up during recent years, and many tons of honey are obtained where little was previously procured. In some instances men devote the whole of their time to the industry of bee-keeping and the supplying of bee-keepers' requisites.

SAMPLE OF HONEY OBTAINED.

One of the most remarkable things in connection with bee-keeping of the present day is the superior quality and sample of honey obtained under the modern system. If one will look back and compare the

honey that was brought into our provincial markets not more than twenty years ago with what one may see to-day, any ordinary observer will be at once convinced of the great strides that have been made. At that time, and in fact several years later, honey was brought into the towns by country people and offered for sale in a variety of utensils. The major portion was of inferior quality, owing to the large amount of bee bread that had become incorporated with it; this was most apparent when it was obtained from the brood combs, which it invariably was.

Now all this is altered; run honey is tastefully put up in glass jars specially made for the purpose, in sizes to suit customers, many bee-keepers labelling their own produce, which in the end may prove an advantage to them in finding other customers. It is also a mark of genuineness. The honey, too, when obtained from various sources is not mixed, so that a bee-keeper may with a little practice be able to say whether a given sample of honey has been obtained from field Beans, White Clover, Limes, or other source.

It was impossible to distinguish the various samples of honey with any degree of certainty under the old system; consequently, good, bad, and indifferent were mixed.

FINDING A MARKET.

Some bee-keepers experience a difficulty in finding a market for their produce, and it is certainly discouraging after a good honey harvest to be unable to secure an outlet on favourable terms for the surplus one may have. Personally, I have no difficulty in this respect, as taking one season with another we get our share of honey, which is often ordered before it is obtained, and it is several years since any remained unsold after this date.

From numerous letters to hand others, although obtaining it in much less quantity, are unable to find a market. In some instances, this is owing to demanding too high a price; in others, for want of care in making a good sample when preparing run honey. It is advisable to keep each crop separate, which is easily done when extracting. If a sample of each is placed in a glass jar and labelled the bulk may then be stored until required for bottling or any other purpose. A comparison of the various samples can then be made at any time, and is a much more satisfactory plan than mixing.

Bee-keepers should endeavour to create a local demand. If honey can be disposed of in the neighbourhood it is a saving of labour and expense. It is surprising what may be done in this respect. The bee-keeper's aim must be to always supply a good article. If run honey is dark and not of good quality, it is much better to feed it back to the bees than to lose a customer, and always to send a sample from bulk, as there will then be no complaint. Comb honey requires care in manipulation; this is usually obtained in 1 lb. sections, and it is not often that the bee-keeper can get them all first-class.

The difficulty usually experienced is to get the bees to finish them off without leaving any empty cells, or some partly filled. This is the case when a spell of cold weather sets in, or when honey is scarce. It is therefore advisable to have two or more samples. The returns will then be made more satisfactory. There is not such a demand for honey in the comb as for run honey.—AN ENGLISH BEE-KEEPER.

A REMINDER FOR "GEORGE HOWDENSHERE."

It will be remembered that some months ago a discussion appeared in these pages between "An English Bee-keeper" and "George Howdeshire" on the relative merits of a hive with ten standard frames and those of larger dimensions. "George Howdeshire" promised the readers of this Journal that after a trial with nearly one hundred large and small hives in the locality where he resides, he would make the result known to the readers of this paper. It would be interesting to know if any of the large hives have come up to the 350 lbs. mentioned in this Journal some time ago.—A YORKSHIREMAN.

TRADE CATALOGUES RECEIVED.

- W. Atlee Burpee & Co., Philadelphia.—*Farm Annual.*
- H. Cannell & Sons, Swanley.—*Golden Seeds.*
- Cooper, Taber & Co., Ltd., Southwark Street.—*Wholesale Seed Catalogue.*
- Dickson, Brown & Tait, Corporation Street, Manchester.—*Seeds.*
- Dickson & Robinson, Manchester.—*Seeds.*
- Dicksons, Ltd., Chester.—*Seeds.*
- E. P. Dixon & Son, Hull.—*Seeds.*
- S. Dobie & Son, Heathfield Gardens, near Chester.—*Seeds.*
- Fisher, Son & Sibray, Ltd., Handsworth, Sheffield.—*Seeds.*
- W. J. Godfrey, Exmouth, Devon.—*Catalogue of Choice Chrysanthemums.*
- Harrison & Sons, Leicester.—*Seeds.*
- Chr. Lorenz, Erfurt.—*Guide for Amateur Gardeners.*
- T. Methven & Sons, Princes Street, Edinburgh.—*Seeds.*
- Stuart & Mein, Kelso, N.B.—*Gardening Guide.*
- J. Veitch & Sons, Ltd., Chelsea.—*Seeds.*
- R. Veitch & Son, Exeter.—*Seeds.*



* All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **8. Rose Hill Road, Wandsworth, S.W.**, and **NOT** to Mitre Court Chambers. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Abnormal Growth on Thorn Hedge (W. G.).—The growths are infested, or rather have been, with the Thorn leaf-rolling mite (*Phytoptus crataegi*), which, in some cases, seriously interferes with the growth for several seasons together, and then entirely takes its departure. There does not appear to be anything beyond that on the sprays, but they were withered when received, and only showed traces of the leaf margin thickening and inrolling. Late attacks sometimes cause flower buds to start into growth at the dreary period, but such occurrences are very rare.

Stoneless Grapes (Young Grower).—Such splendid clusters would be highly creditable to an old grower if all the berries were the same size as one of them—namely, $4\frac{1}{4}$ inches in diameter and nearly round, or much rounder than those of Black Alicante usually are. This huge berry only contained three seeds, the majority, about half the size, containing, some two seeds, and others only one seed, while the too numerous smaller berries are seedless. As the border contains "plenty of lime rubbish," and has received in addition an annual dressing of lime, you do not think the lack of seeds is attributable to absence of lime; all the same, we should not hesitate to apply 4 ozs. of basic slag and 2 ozs. of sulphate of potash per square yard now, pointing lightly in. We attribute, however, the condition of the Grapes mainly to defective fertilisation. It may be that the stigmas were excessively moist at the time of pollen distribution, which we have known to occur in the case of this usually free setting variety, and especially with vigorous Vines. Pay attention to atmospheric conditions another year during the flowering period, and satisfy yourself that there is a free distribution of the pollen to not over-moist stigmas, and we think you will secure a more uniform set and better standard fruit.

Brown Scale (H. G.).—This pest, of which there are several species, does not live apart from the living trees or plants. If you brush off the scale while soft it cannot live, like mealy bug, in the soil or about the houses, for when once fixed it is so for life, not having power of locomotion, the legs being dispensed with at a comparatively early age as parts no longer useful. But if you leave the scale until mature, quite hard and brown, the small dust-like eggs fly in all directions, as you have no doubt observed, and these—the only hibernating form of the insect—may live over the winter, and then, hatching out, the larvæ ascend the trees or plants and fix themselves after a few days by their beaks into the tissues for the purpose of drawing nourishment. When first hatched they are whitish woodlouse-like creatures, and are then very easily killed by the usual advertised insecticides, fumigation with tobacco, or vaporisation with nicotine. You are not bothering us in the least about these pests; we are pleased to render any service to our subscribers. You are quite right about the insects being difficult to kill on young wood, such as that of Peach trees, as during the winter the pests are in the egg state and often not reached beneath the scale, or this falls with eggs intact, and the young appear in the following spring. Petroleum emulsion, however, kills all with which it comes into contact, and even better is caustic soda and potash solution, but this requires to be used carefully on green shoots of Peach trees, and in every case the solution must reach the eggs. In stoves and similar structures the pests breed the year round, and the cleaning being often deferred until the scale becomes hard the eggs are scattered far and wide. Frequent fumigation is unquestionably the proper thing, as when just hatched the larvæ are as easy to kill as green fly, and soft scale cannot possibly return to the plant when once removed. The eggs, therefore, are the source of infestation, and often carried from house to house on the clothes of workmen, and in other ways.

Lawn Manure (H. C.).—The formula is good, but whether the best for your purpose no one can know in the absence of information on the character of the soil, the present condition of the sward, and as to whether an increase of Grasses or Clover is most desired. For present or early application you would not err by using thrice the amount of superphosphate, reserving the nitrate of soda and salt for a dressing in March.

Aquatic Plants (A. Johnson).—For pond margins *Menyanthes trifoliata*, *Rumex hydrolapathum*, *Typha angustifolia*, *Carex pendula*, *Scirpus lacustris*, *Butomus umbellatus*, *Calla palustris*, *Lysimachia thyrsiflora*, *Acorus gramineus*, *Iris pseudacorus*, and *Lythrum roseum superbum*. These all grow well on or close to the edge. To plant in the pond bottom there are *Nymphaea alba*, *Nuphar lutea*, *N. advena*, *Villarsia nymphaeoides*, *Stratiotes aloides*, *Pontederia cordata*, *Aponogeton distachyon*, and *Hottonia palustris*.

Planting Anemones (C. J.).—Choose the first fine day when the soil works cleanly for planting your Anemones. They are best planted in the autumn, but will do now. Draw drills across the bed 2 inches deep and 5 or 6 inches apart, and plant the tubers 5 inches apart in the rows. For choice varieties a thin layer of sand scattered under and around each tuber will be useful. As soon as the bed is planted cover the tubers with sandy loam from a basket or wheelbarrow. Take care that the tubers are placed the right side up, by observing the side that has the old small fibres on it. That side place next to the bottom of the drill. When all are planted and covered up the right depth (2 inches) level the surface with a garden rake.

Eucharises Losing Their Leaves (Puzzled).—The plants have evidently received a check by some cause or other. This would occur if they were removed to a cooler position than that which they previously occupied. You say the pots are not embedded in tan or anything else. If they were plunged prior to their removal the roots would probably receive a check and the leaves fail. If you can now plunge them in a warmer position in the house they will be safer than with the pots exposed, inasmuch as the root moisture will be more uniform, and this must by no means be excessive during the present month, all that is necessary being to keep the soil perceptibly moist. If you can keep the roots healthy and the bulbs are large enough, flowers may be expected in due course. You do not say if the plants have flowered previously.

Ramondia pyrenaica (B. T. J.).—The plant you name inhabits a somewhat varied area in the Pyrenean and Piedmontese Alps, oftentimes on the steep and almost perpendicular faces of the rocks. When so situated, however, it is generally where moisture is in abundance, as it is impatient of drought, preferring protection from hot sun. This, however, is of not so great moment as a plentiful supply of moisture in a well-drained position. Plant it in equal parts of peat and loam, together with a liberal addition of silver sand or grit—it delights to send its tiny fibres into moist sand—and success will invariably attend the operation. From its extremely prostrate habit of growth it is not to be recommended as a border plant, since heavy rains keep the plant almost wholly covered with earth; but on a mound above the ordinary level it may be made as equally at home as in its native habitat. It is chiefly increased from seed, though now and then some few plants throw out offsets; but to detach these with roots is a very dangerous operation, and should always be avoided. Sow the seed as soon as ripe. This will be about the middle of August, and the seedlings will appear the following spring. Do not be discouraged by the slow growth of the seedlings, which is remarkable. When the seedlings are of sufficient size they may either be potted or pricked out in small colonies on the rockery.

Growing Endive (Amateur).—It is hardly worth while sowing Endive before the middle of June for the first main crop, the principal crop—that is, for winter use, needing to be sown early in July, and that for spring use at the end of that month. The seed may be sown in drills 15 inches apart and the plants thinned to 1 foot distance in the rows. This is the best for the early crops or those that have to be blanched on the ground, for which there is no better method than tying the head with matting or covering them with pots, closing the apertures so as to exclude light. The leaves should be gathered together and tied near the top, and in a week afterwards they should be again tied, this time about the middle, and the plants must be perfectly dry. About ten days in summer and three weeks in winter are necessary for blanching. The crops that are intended for lifting and placing in frames are best sown thinly in rich fine soil in shallow drills about 4 inches apart, sowing the seeds thinly, thinning to 3 inches apart, and when having four leaves take up carefully and plant in rows 15 inches apart and 1 foot asunder in the rows, watering as required. These lift with better roots than if not transplanted. The plants should be placed in frames or pits before being frosted, be well ventilated in favourable weather, and protected in severe weather so as to exclude frost. Blanching is effected in the same way as with those outdoors—namely, by tying up the leaves about three weeks before the heads are required for use, tying up a quantity each week, by doing which a constant succession of blanched heads will be secured. Late crops may be planted at the foot of walls or in frames protected from frost, and are blanched in spring same as the early crops by tying, covering with pots, or placing a slate or tile over the curled varieties.

Names of Fruits. — Notice.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow

themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. (H. K.).—1, Nec plus Meuris; 2, Easter Beurré; 3, Winter Nelis. (T. H. B.).—1, Alfriston; 2, Northern Greening; 3, New Hawthornden; 4, Newton Wonder. (Amateur).—Excellent examples of Cox's Orange Pippin. (P. B. S.).—1, Gloria Mundi; 2, Golden Winter Pearmain; 3, Ribston Pippin; 4, Blenheim Pippin. (C. F. H.).—Passe Colmar.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (P. P.).—1, A variety of *Cypripedium insigne*; 2, *Lælia anceps*; 3, *Cypripedium barbatum*. (F. T.).—1, *Ophiopogon jaburan variegatum*; 2, *Bambusa Fortunei*; 3, *Kentia Canterburyana*; 4, *Dieffenbachia picta*; 5, a variety of *Coleus* that could only be named by comparison in a large collection. (A. W. W.).—1, *Tillandsia Lindenii*; 2, *Phoenix dactylifera* (the Date Palm); 3, *Selaginella Kraussiana*. (L. S.).—1, *Meyenia erecta*; 2, *Oncidium tigrinum*; 3, dead.

EDITORIAL NOTICE.—It is particularly desired that all communications, parcels, catalogues, and newspapers intended for the EDITOR, be sent direct to 8, ROSE HILL ROAD, WANDSWORTH, S.W.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary* Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' CEPHAN FUND.—*Secretary* Mr. A. F. Barron. The Royal Gardeners' Orphan Fund, Chiswick, W.

COVENT GARDEN MARKET.—JAN. 5TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1	6 to 4	Grapes, lb....	0	8 to 2
Cobs ...	22	6 24	Lemons, case ...	11	0 14
Filberts, 100 lbs. ...	0	0 0	St. Michael's Pines, each	2	6 5

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0	0 to 0	Mustard and Cress, punnet	0	2 to 0
Beans, $\frac{1}{2}$ sieve ...	0	0 0	Onions, bushel ...	3	6 4
Beet, Red, doz....	1	0 0	Parsley, doz. bnchs....	2	0 3
Carrots, bunch ...	0	3 0	Parsnips, doz. ...	1	0 0
Cauliflowers, doz. ...	2	0 3	Potatoes, cwt. ...	2	0 4
Celery, bundle ...	1	0 0	Salsafy, bundle... ..	1	0 0
Coleworts, doz. bnchs. ...	2	0 4	Scorzonera, bundle ...	1	6 0
Cucumbers... ..	0	4 0	Seakale, basket... ..	1	6 1
Endive, doz. ...	1	3 1	Shallots, lb. ...	0	3 0
Herbs, bunch ...	0	3 0	Spinach, pad ...	0	0 0
Leeks, bunch ...	0	2 0	Sprouts, $\frac{1}{2}$ sieve ...	1	6 1
Lettuce, doz. ...	1	3 0	Tomatoes, lb. ...	0	4 0
Mushrooms, lb....	0	6 0	Turnips, bunch... ..	0	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36	Evergreens, var., doz. ...	4	0 to 18
Aspidistra, doz. ...	18	0 36	Ferns, var., doz. ...	4	0 18
Aspidistra, specimen ...	5	0 10	Ferns, small, 100 ...	4	0 8
Azalea, per doz. ...	30	0 42	Ficus elastica, each... ..	1	0 7
Chrysanthemums, doz. ...	4	0 9	Foliage plants, var., each	1	0 5
„ „ single plants	1	6 2	Lilium Harrisii, doz....	12	0 18
Cineraria, per doz. ...	9	0 15	Lycopodiums, doz. ...	3	0 4
Cyclamen, per doz. ...	12	0 18	Marguerite Daisy, doz. ...	4	0 9
Dracæna, var., doz. ...	12	0 30	Myrtles, doz. ...	6	0 9
Dracæna viridis, doz. ...	9	0 18	Palms, in var., each... ..	1	0 15
Erica hyemalis, per doz....	9	0 15	„ specimens ...	21	0 63
„ gracilis, per doz. ...	6	0 9	Pelargoniums, scarlet, doz.	4	0 6
„ various, per doz. ...	8	0 12	Tulips, various, doz. bulbs	0	9 1
Euonymus, var., doz. ...	6	0 18			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	4	0 to 6	Mignonette, doz. bnchs. ...	2	0 to 4
Asparagus, Fern, bunch...	1	0 2	Mimosa or Acacia, bunch		
Bouvardias, bunch ...	0	6 0	(French)	0	9 1
Carnations, 12 blooms ...	1	0 3	Narciss, white (French)		
Chrysanthemums, 12 bnchs.	2	0 6	dozen bunches ...	1	0 2
„ „ 12 blooms	1	0 4	Orchids, var., doz. blooms	1	6 12
Eucharis, doz. ...	4	0 6	Pelargoniums, doz. bnchs.	4	0 6
Gardenias, doz....	3	0 6	Roses (indoor), doz....	0	6 1
Geranium, scarlet, dozen			„ Tea, white, dozen ...	1	0 2
bunches ...	6	0 9	„ Yellow, doz. (Perles)	1	6 4
Hyacinths (Roman) dozen			„ Safrano (English) doz.	1	0 2
bunches ...	0	9 1	„ „ (French) per doz.	0	6 1
Lilac (French), bunch ...	3	0 5	„ „ per 100... ..	5	0 7
Lilium longiflorum, 12			„ „ Pink, dozen ...	1	0 2
blooms ...	4	0 6	Smilax, bunch ...	1	6 2
Lily of the Valley, 12			Tuberose, 12 blooms ...	0	3 0
sprays ...	1	0 2	Tulips, dozen blooms ...	1	0 1
Maidenhair Fern, dozen			Violets, dozen bunches ...	1	6 2
bunches ...	4	0 8	„ Parme (French),		
Marguerites, doz. bunches	2	0 3	bunch	3	0 4



A PROFITABLE OUTING.

MR. BARLOW sends his two pupils out for a walk together in the country lanes; one returns, having met with nothing whatever of interest; the other, on the contrary, can discourse fluently for hours on the beauties and curiosities he has seen. He is a bit of a prig, but, after all, is much more to be admired than the boy who just strolls along with dull eye and inactive brain. How many of us are like Sandford and Merton, the two pupils of Mr. Barlow? We fear we often miss many and great opportunities for self-improvement through idleness, or perhaps ignorance.

Then, again, we frequently see things that interest us greatly, but having no command of language or powers of description, we cannot impart our information to others, and we do not trouble to cultivate the gift of narration. *En passant*, we may remark that this branch of a child's education is often neglected, and surely there is nothing much more pleasing than a pithy speech, or a neat, well-constructed, essay.

An extract from the "Surrey Mirror" "On Agriculture on the Continent" has come under our notice, and we are greatly pleased with the manner in which the subject is treated by the writer, Mr. A. Holm, jun., of Belchworth—a student who achieved great distinction at the South-Eastern Agricultural College (County Councils of Kent and Surrey) at Wye—winning, in addition to the gold medal of the Royal Agricultural Society of England and other honours, the scholarship offered by the Surrey C.C. to investigate agriculture in Denmark and Sweden. We highly commend the wisdom of a step like this. A young man specially well educated in agriculture is allowed the chance of travelling in company with some of the leading agriculturists of the day, and sees under the most favourable aspects the farming methods of Denmark and Sweden.

We treated of this dairy tour a few months ago, but the information worked on then was by no means so full as these notes now before us. Personal friends told us much of interest, but they did not see things with young, fresh eyes, nor did they make their narrative so interesting.

The first great event of the tour was the inspection of Wedellsborg, on the Island of Jutland, the estate of Count Wedell. The property extends over 54 square miles, and the home farm is of large extent—namely, 940 acres. It appears all is under the plough save 110 acres, so that the labour bill must be heavy. The cattle are entirely of the Red Danish milking breed—190 milk cows, and 110 young stock. In this herd the tuberculin test is used twice a year. These good people are more awake than we to the dangers and losses arising from tuberculosis (English farmers, please copy). The

pigs are a cross of Yorkshire and the Danish breed. Mr. Holm evidently has an eye for a horse, for here he sees room for improvement. We do enjoy seeing a good even stud of draught horses. Fancy a barn to contain 2000 tons of forage!

From Wedellsborg to Copenhagen, and the first object of interest to see was the Milk Supply Company. The milk of 5024 cows is here dealt with, and the hands employed number 300. On arrival the milk is sampled, strained through gravel and fine cloth, bottled and pasteurised, and sold for infants at 1s. 3d. per gallon. Of course the diet of the cows is strictly regulated.

An interesting paper was read by Herr Bernard Boggild on "What the Government has Done to Develop the Dairy Industry in Denmark." A yearly grant of £5500 is made to the Laboratory for Agricultural Research, and a similar sum is spent on stamping out tuberculosis in cattle. Here is an example for our Government; the pest will not be checked here till similar measures are taken. There are also other grants for matters of minor moment, and skilled experts are at the call of those dairy farmers who need their advice free of all cost save travelling expenses.

The colleges connected with agriculture were next visited. The State butter show, and on the following day the agricultural and experimental station at Lynby. The school is one of several, the result of private enterprise, that have been founded during the last thirty years. These schools instruct about 3000 young men every winter, and in the summer the same number of young women, drawn principally from the working classes. These schools seem to get hold of the right material to work on, and how creditable it is to the population to find them ready to embrace these opportunities.

We must not linger in this pleasant Danish land, but away with Mr. Holm to the Co-operative Dairy at Lund in Sweden, where 6000 gallons of milk are daily manipulated, the farmers receiving their separated milk back again. Then there was the college and dairy school at Alnarh. Government grants to this enterprise £2080 per annum, and the college is divided into the following departments:—

- I.—A Higher Agricultural College.
- II.—Lower ditto.
- III.—Higher Dairy College.
- IV.—Lower ditto for men.
- V.—Lower ditto for women.
- VI.—A Horticultural College.
- VII.—A Farriery School.

As far as we can gather instruction and board in the lower school are free, thus admitting a class which otherwise would stand little or no chance of technical education. Of course, the higher grade students pay, but the terms are by no means extravagant.

About the Stockholm Dairy Company we note one point: the managers do not pasteurise their milk intended for infants, but instead have an elaborate system of filtration. Our knowledge of the requirements of infants is not very great; but we do know that for some children the boiled—i.e., pasteurised—milk would be most unwholesome. It is not natural, and therefore should only be used as a *dernière resoit*—that is, if no really safe milk can be obtained.

On the estate of Hamra, belonging to the Alpha-Laval Separator Company, are conducted experiments in dairying and cattle-breeding, and the favourite type of cow is red-and-white, a cross of Ayrshire and Shorthorn, first-rate milkers.

There is a college farm at Uttana of 1400 acres; plenty of scope here for the pupils. Here, again, we find an upper and lower school, the latter within the means of youths wishing to become bailiffs.

Mr. Holm sums up by saying the Dane and Swede work harder and make longer days than our men like; and he adds that he thinks abroad greater attention is paid to the feeding of stock than in England. We think this must apply to small owners only, as on large, well-managed farms stock feeding is reduced to a science here. "Co-operation" seems to be the watchword, and until we see our way to some sort of unity in England we must not be surprised to find the foreigner underselling us. The Government grants, too, in aid of agriculture are most liberal, and the people appear to be alive to their advantages.

We only hope Mr. Holm will make some other little tours, and give us the benefit of his further travel. He makes his outing profitable to himself and also to his readers.

WORK ON THE HOME FARM.

A matter which has been constantly forced on our notice during the last few years is the value of peat moss litter to the ordinary farmer. The dry seasons have, by minimising the crops of straw, increased the value and importance of bedding materials. Some farmers, when straw is scarce, never think of buying bedding, but let their cattle lie in a condition of filth such as almost requires the intervention of the Society for the Prevention of Cruelty to Animals. We have seen cattle tied up in a shed so close together that they could not lie down; as the owner said, "Straw was very scarce, and they kept cleaner standing." But is this true economy? We think not. However scarce and dear straw may be, there is no reason for farm animals being kept in a state of filth whilst peat moss litter can be bought at little over 20s. per ton.

We have tried it well under varying conditions, and have found it best when used as a foundation with a little straw on the top. This is particularly the case in the cow house, for here peat moss alone is too dusty, and is apt to get into the milk unless the cow's udder is carefully cleansed immediately before milking. For the cow house we prefer to have the gutter filled with moss litter, but the bedding should be straw.

For a covered yard, or for any yard in fact, a good covering of peat moss when the yard is empty—i.e., before stocking in autumn or after clearing of manure—makes an excellent foundation for the straw; it absorbs all liquids so readily that the straw put upon it is kept well drained, and lasts much longer.

We have had a short spell of frost; the weather is now again mild, and ploughs are at work. The frost enabled us to cart some manure on to old seeds, which we shall now plough 10 inches deep with chilled ploughs and skim coulter. The manure and turf will thus be well buried, and the land by March should be in good order for planting with Potatoes.

The mild weather has been very favourable for Turnips and Swedes, which have been growing all the time, and are now a good crop and likely to be plentiful after all.

We have been killing the usual bacon pigs, and if the pork trade would brighten up a bit should like to clear the spare ones, for pig corn is dear and Potatoes almost unobtainable.

METEOROLOGICAL OBSERVATIONS.

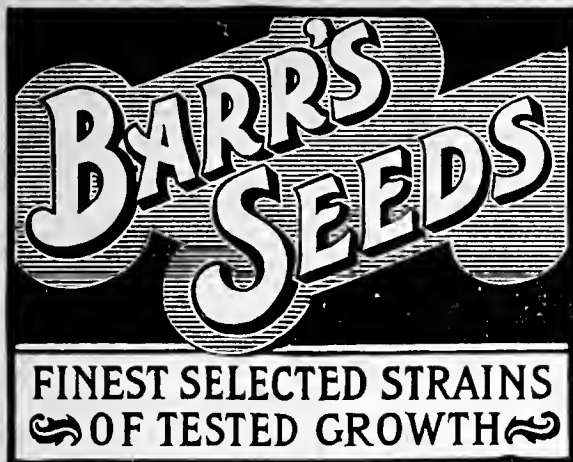
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.
1897-98. December and January.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
		Dry.	Wet.			Max.	Min.	In Sun	On Grass	
	inchs	deg.	deg.		deg.	deg.	deg.	deg.	deg.	nchs.
Sunday 19	30.358	44.2	44.0	N. E.	43.8	45.3	39.2	47.3	39.6	0.010
Monday 20	30.380	41.7	38.6	N. E.	43.1	42.4	41.1	46.8	37.1	—
Tuesday 21	30.528	38.2	36.1	E.	41.3	38.9	32.7	43.9	27.3	—
Wednesday .. 22	30.668	30.6	30.5	N.	40.1	37.0	27.3	42.1	24.1	—
Thursday .. 23	30.579	30.1	30.1	N.	38.2	33.7	25.2	35.2	23.3	—
Friday 24	30.440	26.9	26.8	N.	37.1	33.2	25.0	33.0	22.8	—
Saturday 25	30.391	28.7	28.6	Calm.	36.3	31.0	24.8	32.8	22.8	0.013
	30.478	34.3	33.5		40.0	37.4	30.8	40.2	28.1	0.026
Sunday 26	30.409	27.6	27.2	Calm.	35.5	47.5	23.7	50.6	21.2	—
Monday 27	30.067	47.3	45.2	S. W.	35.7	49.4	26.3	54.1	22.1	0.072
Tuesday 28	29.923	47.4	46.4	S. W.	39.0	50.8	45.8	63.7	40.3	0.098
Wednesday .. 29	29.704	50.8	48.5	S. W.	40.2	53.1	42.9	55.7	37.3	0.304
Thursday .. 30	29.254	48.2	48.0	S. W.	42.8	49.9	46.9	55.6	45.3	0.056
Friday 31	29.293	45.2	44.0	S.	42.8	48.4	43.1	58.3	38.6	0.068
Saturday 1	29.343	41.1	40.9	N. E.	42.0	43.8	40.1	51.8	34.6	0.058
	29.713	43.9	42.9		39.7	49.0	38.4	55.7	34.2	0.656

REMARKS.

- 19th.—Dull and drizzly morning, and overcast after.
 20th.—Fair, but sunless till nearly sunset; clear night.
 21st.—Fair, but sunless.
 22nd.—Cold and dull early; faint sun all day, and bright for two or three hours.
 23rd.—Cold with slight fog, not entirely clearing at any time.
 24th.—Cold and foggy throughout.
 25th.—Foggy most of the day; evening fine, starlight, and thick white frost; from 10.30 P.M. to midnight exceptionally dense fog; street lamp invisible at 17 yards distance.
 Cold, foggy week with high barometer.
 26th.—Calm, frosty, and rather foggy; at 10.30 A.M. a sudden rise of temperature; afterwards dull and damp.
 27th.—Fine mild morning; dull afternoon; a little rain at night.
 28th.—Fair morning; sharp squall with rain at 2.45 P.M., very bright afterwards.
 29th.—Gale and squalls all day and night, with almost continuous rain from noon to 7 P.M.
 30th.—Squalls of wind and rain all morning; fair afternoon, with a little sun; fine night.
 31st.—Fair morning, with gleams of sun; alternate sunshine and showers after noon; complete primary and secondary rainbows at 3.15 P.M.
 1st, 1898.—Fine, but sunless.
 A mild and rainy week.—G. J. SYMONS.



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Journal of Horticulture.

THURSDAY, JANUARY 13, 1898.

THE JOURNAL OF HORTICULTURE can be obtained from the Office, 12, Mitre Court Chambers, Fleet St. London, post free for a Quarter, 3/9. Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.

A DAY IN OLD ORCHARDS.

SOME little time ago I was invited to examine five orchards on an estate about thirty miles from London, and advise on the renovation of the trees, or such of them as were amenable to improvement. It is well to make the best of old trees that may be induced to bear useful fruit, if only of second-rate value, until young trees, which should at the time be planted, are capable of yielding a supply of high-class produce. A brief description of the several orchards, coupled with the advice that was given to their owner, may possibly be useful to others, and with that object this little narrative is prepared.

Orchard No. 1.—Soil evidently good, and grass luxuriant. Only a few relics of canker-eaten, moss-laden Apple trees stood here and there in the body of the ground; but across the end were trees which had not lost their vigour, but in varieties worthless for consumptive purposes.

Advice.—The quickest method of obtaining a supply of excellent fruit would undoubtedly be by making a clearance of the whole of them, except those previously alluded to as being in fair health. The others were practically beyond renovation, and would certainly not pay for time and material expended on them. The end trees of worthless varieties were advised to be cut down, the stems limewashed, and have several grafts of Bramley's Seedling Apple inserted in them in the spring. This is one of the best restorative varieties in existence. Its innate vigour and powerful leafage prepares and deposits organised matter so plentifully as to in no long time cover ancient and even cankered stems. This I have seen in Nottinghamshire and elsewhere, and no doubt any number of scions may be obtained from Mr. H. Merryweather of Southwell, who tells us in his advertisements it is the "best Apple on earth."

Young Trees.—The enclosed site is well adapted for a cultivated fruit garden established on either of the following methods:—

A.—Planted with bush Apples on English Paradise stocks (also a few Plums and Pears if desired); trees 8 feet apart in rows 10 feet asunder

of free bearing and moderately compact (not the most robust) growing varieties.

B.—Planted with low standard trees, of similar varieties, 12 feet asunder. Strong growers should be 15 apart, having in view their eventual development.

In either case, Strawberries, Raspberries, and Black Currants, or such vegetables as Potatoes, Onions, or other root crops may be grown between the rows for a few years, but not to encroach upon them, or to involve interference with the fibrous roots of the trees by digging.

C.—Orchard standards, medium growers 24 feet apart, robust growers 30 feet, on prepared stations in the grass.

Soil Preparation.—For methods A and B the whole of the ground should be bastard trenched—i.e., working it two spade or fork depths, but not bringing the under soil to the surface. Line out a space 2 feet wide, remove the soil to a full spade depth, or a foot including shovellings; thoroughly break up the bottom to a similar depth, not leaving the soil in large chunks. Set out the second trench of exactly the same width; chip off the grass, and place it on the broken up bottom soil, removing fleshy rooted weeds. Spread on the strip from which the grass and weeds have been removed 1 lb. of basic slag (for giving lime and slow acting phosphate), with a little less than half that quantity of kainit (for potash) on a length of 6 yards = 18 feet by 2 feet, and well mix with the top soil in turning it over on the grass in the trench. If this is well sprinkled with lime first, making it quite white, it will be advantageous.

The mixing of the minerals applied is better done by digging with forks, taking small spits or slices, than with spades taking wide ones. If a large heap of wood ashes can be obtained by burning refuse, including all the portions of old trees that can be so reduced, this will do instead of kainit for giving potash, and may be spread on half an inch or more thick if sufficiently plentiful. Treat the whole ground as advised and it will grow fruit trees, bushes, and root crops. The soil taken from the first trench will fill in the last.

Stations in the grass for trees should be similarly prepared, and 5 or 6 feet in diameter. Plant carefully after the soil has settled, pruning all broken ends of roots smoothly; spread these out evenly in layers with soil between, and do not sink the stems the least trifle deeper than they were before the trees were taken up. Press down the soil moderately, stake the trees if needed, without injuring the bark. Spread littery manure over the ground; rake it off when the sun attains sufficient power to warm the soil to incite root extension, and mulch with closer manure on the approach of hot weather for keeping the soil moist near the surface, and for the retention and multiplication of roots there. Cut off two-thirds of the long strong shoots of the newly planted trees (the roots of which have been much shortened in the process of digging up) when the buds commence swelling in spring, but any short and weak branches leave unshortened, as the terminal buds of these will be the first to produce leaves and summon the roots into activity. In due time the weak parts should be removed, as the better growths from the stronger shortened stems will form the basis of the tree. Proceed on the lines indicated, and a thrifty fruit plantation will be established.

Methods A and B would cost much more than C, but give substantial results far sooner and pay much better in the course of a few years, because in the latter case a great extent of ground would be wasted (or devoted to growing grass), while by the alternative plans it would be utilised in the production of fruit or other serviceable crops. Under the management of a competent gardener the first method (A) would be preferable; the second (B) is simpler, and after some years bearing every other tree could be removed, if thought desirable, the remainder standing 24 feet asunder, and the land laid down to grass.

No. 2 Orchard.—Centenarian or bi-centenarian trees, which can no more be made healthy bearers of superior fruit than an ancient decaying Oak can be reinvigorated, or a hard-worked, ill fed, actually worn out thirty-year-old horse can be made young and strong again. It is a patriarchal orchard, picturesque, but cannot be made profitable. Nor can the planting of another on the same site be advised, for the trees

during all those years of occupation have practically exhausted the soil of fruit-growing constituents. If a new orchard were desired it would be far cheaper to establish and give much better results in a new site. Of that there can be no doubt whatsoever. Notes on the above orchards must be postponed.—ADVISER.

SIMILARITY OF LIFE IN THE VEGETABLE AND ANIMAL KINGDOMS.

ON THE BORDER LINE.

In placing the two great kingdoms in juxtaposition, it is possible that whilst taking a bird's-eye view of the whole of vegetable life our vision is foreshortened in turning to the animal kingdom, and we are apt to look little beyond our own species or the higher forms of life immediately beneath our notice. *Apropos* of this, Charles Bennett, a naturalist, wrote, "We can only judge of things by comparison, and have taken our ideas of animal life from the larger animals. . . . How many facts are ignored which will come one day to derange our ideas of subjects which we think we understand! At present we know just enough to be aware that we should be surprised at nothing."

In approaching so vast a subject, so vast, indeed, that one may well pause on the threshold in contemplating the infinite phases of created life, the most comprehensive survey that the mind is able to take, or the farthest that human thought is able to travel, must fall short, not of desire, but of accomplishment to do it justice. Certainly the most this paper can pretend to do is to show some salient points of similarity between the two kingdoms, with the hope, a vague one at the best perhaps, that it may strike the keynote to a more harmonious understanding of the beauty and the subtlety of this silent life, and that a bond of sympathy may be established between those who labour in the great field of Nature and the objects of their care to the attainment of the best results.

Going back to the very border line, which, indeed, presents so little in the way of demarcation that Crabbe—who wrote at a time when the twin physiological studies exercised the minds of some of the most brilliant savants of that or any day, and whose poetical effusions, if somewhat crude, have at least been accredited with the characteristics of force and accuracy—in expressing the difficulties met with says:—

Involved in sea-wrack here you find a race,
Which Science, doubting, knows not where to place.

This, however, is in allusion to those forms of life, the Polyps, existing in water, which have since been relegated to the animal kingdom. One is, perhaps, inclined to ask why such stupid beings that vegetate rather than live, deficient in all the organs which we generally associate with life in the animal kingdom, should be placed in it? We can take a parent Polyp, make him, or her (it does not matter which), into cuttings, each cutting developing into the perfect plant—no, animal—with the same facility with which we may propagate the common Stonecrop by chopping it up and sowing it broadcast. There is really no intention of questioning the rights of these extraordinary creatures to the position given to them by Science, but one could hardly fail in commencing to observe how narrow is the border line between the two kingdoms.

THE SENSIBILITY OF PLANTS.

Ere briefly touching upon this interesting phase of our subject the opinion of two high authorities may be adduced. Dr. Lindley, in his general considerations upon vegetable physiology, says, "The analogy that undoubtedly exists between plants and animals is most striking." And Professor Asa Gray remarks, "The spores and other reproductive bodies of many of the lower Algæ may claim to have first a characteristically animal and then an unequivocally vegetable existence." It is not surprising that even such an ardent pupil of Nature as the great Linnæus should go a little astray in tracing the hidden paths, for we find him formulating his diata defining the then called "Three Kingdoms of Nature" as follows:—"Minerals grow; vegetables grow and live; animals grow and live and feel." In a sense only is the growth of minerals now recognised, such bodies increasing by aggregation or superposition, by mechanical or chemical agency. Travellers who followed the tracks of this great pioneer have come to this conclusion, and few will now question the correctness of it; and they, too, have done something towards discovering the missing link—the break—which Linnæus thought sufficient to distinguish between the two great kingdoms of life.

We have yet, possibly, the faintest glimmer of light to show that feeling, as represented by sensibility to touch, exists in plants; but we have that, and who shall say what the search-light of science may yet reveal in the silent life of the sister kingdom, or to what depths

the present darkness may be illumined? Darwin's observations upon twining plants lead to the inference that they possess in a distinctly perceptible degree the faculty of feeling. This we may admit in noting how the bine or tendrils of certain plants grope blindly, as it were, for an object of attachment, such object only requiring to be brought in contact with the sensitive tentacular-like growth than it is at once appropriated, pretty much the same as the cuttlefish, whose instinctive sensibility certainly goes no higher in the scale of intelligence in those cases where it has been known to grip in its tentacular embrace the anchor hanging from a yacht and retain its grip until dismembered.

With the plant sensibility to touch is apparent, for the growth, whose spiral tendencies have hitherto lain dormant, at once displays its inherent power. Tendrils of the Vine illustrate this in a marked degree, sufficient as it is to overcome the tendency of most vegetable growth, particularly that of twining habit, to an upward direction; the tendril being able to perform its functions on a horizontal wire, and to which every semi-revolution has of necessity a downward inclination. Should the tendril, however, in its course meet with any appreciable decline below the horizontal plane it will double back upon itself and travel the easier road. More delicate observation has revealed a sensibility to touch in plants of a totally different habit—the Oxalis, for one. Results of investigations into this phase of plant life by Morren and Hofmeister have been confirmed by Darwin. This is quite apart from the very pronounced examples afforded by such plants as the Mimosa pudica or the Dionæa muscipula, whose sensibility can be favourably compared with many of the lower types of life in the animal kingdom, and even with some of a higher grade whose insensibility to pain disproves the theory that they "in corporal sufferance find a pang as great as when a giant dies."

In proof of the latter and in disproof of the quotation, we have the experience of the entomologist Haworth, who in catching a dragonfly accidentally severed the long abdomen from the rest of the body, and presenting a fly to the mutilated insect, it was immediately seized and devoured; a second fly being treated in the same manner. The dragonfly upon being set at liberty, in Mr. Haworth's words, flew away with as much apparent glee as if it had received no injury." One is inclined to digress with remarkable examples in which the heart, brain, and stomach have been removed, whilst life has existed for months after, but sufficient has, perhaps, been adduced to show that we place too high an estimate upon sensibility in the animal kingdom to the depreciation of plants, which are voiceless to express any feeling they may have; and which, of course, ordinary observation says they have not. This remains to be proved.—INVICTA.

(To be continued.)

FAIR DEVON.

(Continued from page 569.)

CIDER production was no doubt the chief object in view when most of the older Devonshire orchards were planted, but as that industry has declined, and the fermented juice of the Apple has ceased to be the popular beverage it was in former times, the plantations have lost their importance in the eyes of farmers or occupiers of the land. Dr. Bull of Hereford has traced back the origin of the greater portion of orchard planting in England to the end of the seventeenth century, when Continental wars stopped the importation of foreign wines, and it became "an object of national importance—a patriotic duty—to encourage the home production of cider and perry." Enormous quantities of this beverage were made which were consumed in a correspondingly liberal manner, for the workmen were allowed practically as much as they could drink, which is said to have been in many cases $1\frac{1}{2}$ to 2 gallons each per day. Indeed "experienced" cider drinkers are even now pointed out to the curious in such matters, who are capable of disposing of 2 gallons in a day. If the decline of such habits were the only matter in connection with the failing of the Devon orchards there would not be much to lament; but while in the early days only varieties having a reputation for special qualities were planted, in later years many worthless seedlings have been allowed to take their place, until we search in vain for the Apples which were once so celebrated. For example, the Coccagee was at one time as celebrated in Devonshire for producing the highest quality of cider as the Foxwhelp has been, and still is, in Herefordshire, but in my journey I did not succeed in finding a single specimen of the variety which was known to be true. It is procurable from a few nurserymen, but is little known amongst the farmers.

Good cider is, however, still made in Devonshire, and though I tested many brands that were undeniably poor, a few were excellent, and quite equal, in my estimation, to the light wines of France and Germany. In really first-rate condition, cider is both wholesome and pleasant, but the liquid ordinarily sold to the public under that name is simply a libellous counterfeit. If some enterprising business man,

with plenty of capital at his disposal, could discover a new and taking title for cider, could produce a high quality brand, and advertise it largely, there might be a fortune in it, even in these times.

The remark of my travelling companion has led to rather a long and rambling letter, but it must not be concluded without a word respecting the great charm of Devonshire, its varied and picturesque scenery. Certainly it is one of the most distinct and delightful of our English counties. It has not the ruggedness of Derbyshire, yet one can find all the wildness desired on dreary Dartmoor and amongst its towering "Tors," while the succession of hills and valleys, with the rich luxuriance of vegetation, everywhere provides abundant attractions for the lover of Nature. As a holiday resort it is not surprising that "Fair Devon" has gained so much fame, and thousands of those who annually seek the attractions of other lands might find in this charming county all that the most exacting can desire. To the horticulturist it also presents abounding interest in the numerous fine gardens and collections of trees. Even in searching for the wild plants, especially the Ferns, many a pleasant day could be spent. A popular writer (a Devonian) says, "We have found Blackberries in some of the valleys that would compare favourably with the Mulberries of many favoured climes, and the Raspberries of the most carefully tended garden. Passengers sitting on the top of the coach have gathered wild Raspberries in hedgerows fine enough to excite the envy of many a market gardener in the Midlands, some of the southern counties too." I was not fortunate enough to see any of these wonderful productions, but what I did see (perhaps even more remarkable) shall be described in another contribution.

That fruit is grown successfully in Devonshire, visitors who explore the beautiful valleys which extend along the boundaries of the counties of Devon and Cornwall in the direction of Plymouth, are afforded very surprising proofs. The charmingly picturesque River Tamar winds its way to the sea through deep valleys, the hills on each side rising to a considerable height and extremely steep, at some places, in fact, almost precipitous. A large portion of these slopes is occupied with Oak coppice or Fir plantations, but extensive areas have been cleared at intervals and are devoted to a very different form of cultivation. The first time I had the pleasure of travelling through the Vine-growing districts of France and on the borders of Switzerland or Italy, nothing impressed me more than the height and steepness of the slopes clothed with Vines, and therefore subjected to the art of the cultivator. In some cases it seemed almost impossible that men could work on land at such an angle, or that strong-rooting plants like the Vine could obtain sufficient hold, for one would expect the soil to be washed away as fast as it is formed. It is true the Devonshire slopes cannot equal either in height or steepness the approaches to the alpine regions of the continent, but there are portions of the River Tamar district which in these characters are not surpassed in England.

Strawberries may be seen flourishing in many different soils and under very different conditions. I have had them on heavy land but slightly removed from clay, and I have had plantations on soils of the other extreme—namely, those nearly approaching to sand, in which it would never be expected that these plants could grow in any degree satisfactorily. Yet, making allowance for the different behaviour of some varieties, profitable crops have been had from both. It has been more than once recorded in this Journal what exceptional success has been obtained in the neighbourhood of Virginia Water in the cultivation of Strawberries on what appears at first sight to be little more than a sand-bank. The soil of the Devon and Cornish hills is not so light as that, but it is in many places much lighter than would be regarded generally as favourable to Strawberries, yet there they are, not in a few hundreds, but in many thousands, covering spaces varying from a few square yards up to 20 or even 30 acres. That the plants are thoroughly at home is evinced by the fine healthy foliage, and more substantially to the grower by the abundant crops produced.

It would be difficult to estimate the extent of land under Strawberries in the neighbourhood, but there are certainly some hundreds of landholders almost entirely occupied with their cultivation. Many of the smaller growers do all the work themselves, with the aid of their families, and some additional help at fruit-gathering time; they even occupy themselves during the winter in the manufacture of the punnets, and the boxes employed for packing the latter in, thus saving a few shillings in their expenses. One successful worker informed me that they can purchase sufficient chips to make a gross of punnets for 1s. 6d., but if they buy them ready made they cost 2s. 6d. per gross. As the larger growers require many thousands of these, the local manufacture of the punnets is quite a home trade for winter.

The punnets are, however, different from those we are accustomed to see in the London markets or the northern towns, which are supplied

from the southern counties. Though considerably to the advantage of the grower in point of size, and convenient for packing in boxes, they do not appear to be well adapted for such a soft and easily damaged fruit as the Strawberry. They are too deep in proportion to their width, and being slightly contracted at the top, which does not allow the fruit to be seen to the same advantage as in shallower punnets. The average size is $2\frac{3}{4}$ inches deep, $4\frac{1}{4}$ inches in diameter at the top, and $4\frac{1}{2}$ inches across at the bottom, and they therefore do not hold anything like a pound of fruit. As most of the fruit is for early sale, and by far the largest quantity is disposed of in punnets at good prices, it must be a very profitable way of distributing the produce. A grower who has steadily advanced from small holdings to one of about 30 acres, sends away 10,000 punnets on three or four mornings a week in the height of the season, or a total of about 150,000 punnets in good seasons, and he employs from 100 to 140 gatherers, who come from Plymouth and neighbouring towns.

The land cleared of Oak coppice, I was assured, is the most satisfactory, and it is said that the Fir plantation land does not yield nearly such good results, even when the soil seems in other respects more suitable. The general method is to clear the ground gradually, grub up all the roots, plough, give a heavy dressing of manure, and then take a crop of Potatoes, which have a beneficial preparatory effect on the soil apart from the cleansing. The "manure" which is almost exclusively employed is obtained from Plymouth, and appears to be nothing but the refuse collected from streets and dustbins. This costs £2 10s. per barge load of 30 tons, and it is estimated that owing to the cost of carting and spreading on the steep slopes the total cost is about £5 for the quantity named, which may be distributed over 1 acre to $1\frac{1}{2}$ acre. A few of the more enterprising have tried artificial or chemical manures, but they do not seem very much impressed with the results, though one or two speak favourably of basic slag applied in heavy dressings for Strawberries, Raspberries, and Cherries.—VIATOR.

(To be continued.)

HARMFUL AND HARMLESS GARDEN MOTHS—14.

AMONGST the moths that are bred in gardens, or come to them as visitors, the great majority are of small size, belonging to the Geometer or Tortrix group, or to the numerous division of "tinies," which, though diminutive, have often such splendid colours. Of the moths with stoutish bodies that are on the wing during the twilight or all night long, most are members of the Noctua group, insects which are easily recognisable as a brotherhood even by those who are no naturalists, though the separation of individual species is often puzzling. Light offers no attractions to them, as it does to the species of some other families; but sweet substances, in flowers or elsewhere, do not fail to draw. It is with the object of ensnaring them that the collector spreads upon tree trunks or palings his cunningly mixed compounds, the recipes for which vary. Usually it is made of treacle or the coarse sugar called "foots," and the solution is flavoured by a dash of rum, perhaps a little oil of aniseed. Gardeners might follow the same plan to reduce the number of sundry species which, in the caterpillar state, do a considerable amount of mischief some seasons. Such a preparation, when it is more convenient, may be used as a bait by wetting rags or pieces of cloth with it and hanging them up.

Passing along a flowery border or bank on a summer evening, after sunset, with a lantern, it is a pretty sight to watch parties of these moths eagerly helping themselves to the honey by means of their long spiral tongues. Sometimes, in their anxiety to get to some coveted blossoms, they push each other unceremoniously, their eyes frequently sparkling like diamonds or tiny stars. (What produces these gleams of light is uncertain, I can hardly think they are of a phosphorescent nature.) But this is singular, upon a bright moonlight evening we seldom see such moths on the wing, or, at least, only a few stragglers. The majority of Noctuas exhibit dull colours; some of them have conspicuous tints, especially on the lower pair of wings, which are then covered by the upper pair when the insect is reposing. Nearly always the body is thick, and the down upon the thorax rises into a sort of crest. During the day, these moths sit with folded upper wings, sometimes upon the earth, or amongst low herbage, others select walls, palings, and trunks of trees as a place of rest. Frequently the colours of the moth harmonise with the object selected, the resemblance being so close that persons occasionally place a hand upon some moth unawares, only discovering the fact by the soft feel.

The habits of the Noctua caterpillars vary; some of them are to be found all the year under or on the earth, from which in winter they are dislodged by the gardener now and then, also by the birds. Of those that are about in the spring and summer many feed at night principally. To this division of insects belong the bulk of the destructive army of surface caterpillars which direct their attacks to

the crowns and underground stems of plants, not merely injuring but often killing. Mostly they are smooth, stout, of dull colours, with trenchant jaws; if alarmed they roll into a ring, feigning death. A few live between the folded leaves of trees. In the group of dagger moths the caterpillars are hairy, and feed chiefly on trees or shrubs. Amongst the Noctuas only there occur two or three species that might be said to be friendly to horticulture, for their caterpillars are partly cannibals, sucking at times the juices of others. Sometimes the chrysalis is enclosed in a cocoon attached to a branch or twig, but generally it is placed under the soil at a moderate depth; it is black or dark brown, and glossy.

In those good old times, when handsome butterflies and moths were sought for the purpose of making "pictures," so called, the Peach-blossom moth (*Thyatira batis*) was looked upon as a prize. Occasionally it is discovered in gardens, having flown over from a hedgerow where the Bramble afforded food to the caterpillar during autumn, the English name having reference to the adornment of the moth, not to any harm done by the insect to the Peach. Upon the upper wings are arranged five spots, the edges of which are white and the centres rosy or reddish brown; their shape might suggest pink petals, but scarcely those as large as the Peach. No doubt this tint led to the selection of the generic name, that of an old city famed for its purple dyes. The caterpillar is curiously humped, and holds on to the twigs with the middle legs, the head and tail being raised in the air.

Where the graceful Birch adorns lawns, shrubberies, or avenues, it often supplies food for some caterpillars of the Noctuas called the satin or lutestring moths, from the glossy appearance of their wings, which are rather ample for the size of the body; they form the genus *Cymatophora*. Of these we may take as a sample *C. duplaris*, which flies in the evening about midsummer, occurring through most English counties. The wings are smoky grey, with a few white marks, and some darker lines. It is the habit of the caterpillar to spin together two or three leaves of the Birch, but it does not eat these, using them for shelter only. At night it issues forth to devour neighbouring leaves, then returns to its home; if alarmed it runs out of this backwards.

Quite a contrast in size to the preceding species is the little moth known as the marbled beauty, or *Bryophila perla*. It is one of the species that are particularly abundant near the metropolis. For an obvious reason suburban gardens are more frequently protected by walls than by hedges or palings, which give but poor security, and upon these walls, when they have obtained some age, flourish numerous flat lichens, which the moist atmosphere of London suits well. Upon these the caterpillars of this moth feed, usually at night. Sometimes they appear to have a fast, for when the lichens are dry they are unpalatable, and the caterpillars remain still in the small abodes they have made. I have seen both stone and brick walls studded with these moths for weeks between the middle of July and the end of September; there is probably a succession of them. Winter they have indeed, but they seldom travel any distance by their aid; they are pale grey, often suffused with green, also having spots and lines of a darker colour. Many gardeners must have noticed these moths, since they are observable in parties at times, resting on the walls, and it is worth while during these winter months to look again along them, where the caterpillars are now hibernating. Hatched from little pearly eggs in October, they feed a few weeks, then conceal themselves within crevices of the bricks and mortar, spinning silken cocoons. If the weather is mild they come forth in February or March and eat the lichens of spring, chiefly at morning and evening. Each has his house, composed of fragments off the wall or particles of earth, which the caterpillars unite with silk, these abodes resembling a portion of the wall; in these, when the weather is warm and dry, they remain for days secreted. Allied to this is a less common species, *B. glandifera*, or the marbled green, of similar times and habit.

There is a family of moths styled the wainscots; their caterpillars mostly select for food grasses and reeds of a variety of species. In gardens near streams or fields, they are occasionally found by day sheltering amongst low plants. One species at least may do us a good turn, this is the oddly named brown-line bright-eye; it has brown lines certainly, and a very conspicuous white mark on the fore wings. In science it is the *Leucania conigera*. Its period of flight is July, and it is distributed over Britain. From autumn to May the caterpillar, which is brown, black, and yellow, feeds upon grasses, being especially partial to that annoying species, the couch or spear grass (*Triticum repens*). One of the prettiest of the wainscots is the clay moth, *L. lithargyria*; the colours, though not particularly bright, are shown in delicate lines and spots upon a reddish-brown ground. Also we notice some beautiful tints in the common wainscot, *L. pallens*, rather lighter in colour, which occurs from June to August. The caterpillar lives on grasses for eight or nine months. One of the abundant moths along the course of the Thames, near London, used to be the southern wainscot (*L. straminea*). The home of the caterpillar was in the reeds, but of late years it has been scarce.—ENTOMOLOGIST.



LÆLIA ANCEPS VIRGINALIS.

As the issue (January 20th, 1887), containing the illustration and note relative to this charming Orchid has long been out of print, we reproduce it here (fig. 5) for the benefit of "D. B. C." and others. According to the note which accompanied the woodcut it was sent to South Kensington from Mr. F. A. Philbrick's choice collection at Bickley. The description was as follows:—It is remarkable for the great size of the flowers, which are 5 inches across, the petals being nearly $1\frac{1}{2}$ inch across, of great substance, and pure white. The lip is broad with a yellow throat. In contrast with the richly coloured forms of *L. anceps* that are so useful at this time of the year this variety appears to excellent advantage.

CALANTHES.

MUCH has been written in praise of these beautiful Orchids, and in establishments where table decorations are extensively carried out their use has become almost indispensable in the winter season. Too much cannot easily be said in their favour for table work. *C. Veitchi* is especially much admired; the long sprays thrown carelessly on the cloth or arranged lightly in vases, their elegant arches of flowers considerably enhance the appearance of the dining tables of the well-to-do. I know of no prettier effect than a well-arranged table decked with these flowers intermingled with a small amount of Fern or Asparagus, with bright shining *Smilax* as a set-off to the whole. It is also well known how suitable they are on the plants for mixing in groups with Ferns and other suitable kinds. One of the best small groups I remember seeing was composed chiefly of *Calanthe Veitchi* with Roman Hyacinths and Ferns, set up with pieces of cork and moss as an imitation rockery. The effect was really charming, and not nearly so artificial looking as one might on first thoughts suppose.

A good deal has been said against these deciduous *Calanthes* because they lose their leaves at flowering time, though I do not think this is made so much of as formerly. Really, from a gardener's point of view, this characteristic has its advantages, and though admiring the plants very much myself when they are in full growth, I think where space is a consideration—and where is it not?—the gain through being able to stand the pots nearer to each other when the leaves fall amply compensates.

A few remarks as to culture may not be out of place. After the plants have flowered they may be stored in any out of the way corner where drip does not reach them, and the temperature does not, as a rule, fall below 55°. There they may rest until March, when upon signs of starting into growth preparation should be made for potting. The pots may be of various sizes, from 5-inch to 7-inch, according to the size of the pseudo-bulbs and the number in each pot. I consider medium-sized pseudo-bulbs are calculated to give a better return where the spikes have to be cut than those of extra large size. I say nothing against these latter as specimens of good culture, but two or three smaller spikes of useful flowers may be grown in the room of one of extra size, and will in most cases be found more suitable for the table. Have the pots clean and well drained, with some moss or rough turf over the crocks to prevent blocking. As to soil, some growers use only turfy loam with the finer particles shaken out. A good compost found to grow these plants fairly consists of turfy loam with about a third peat and a sprinkling of sand, with the addition of a very small proportion of well-decayed sheep or cow dung.

The old plants may be shaken out of the soil, and if desired to increase the stock, those which have produced flower spikes can be packed rather closely in pans or boxes and placed in strong heat, when a number of them will break and produce small pseudo-bulbs, which ultimately should be grown with the others. Those remaining of the current year which have to produce the flowers in the future should have their roots shortened to about an inch, and be potted firmly. For a time they will need very little water, a slight moistening with the syringe occasionally sufficing, and as growth increases so must the supply of water. When the pots have become full of roots weak liquid manure made from sheep or cow dung may be given once or

twice a week, according to requirements. Give water plentifully from the time the plants have made fair growth until the flower spikes appear. As these lengthen gradually diminish the supply, and by the time the first flowers open no more will be needed before the plants are ready to start again in the following March.

It has been advised to lay the plants in boxes in leaf mould or damp moss in preference to potting at once. I have tried both methods, and while admitting that the former has advantages, yet I prefer the latter, as when the pseudo-bulbs have emitted rootlets into the layering material, which they do freely, it is almost impossible to avoid breaking some of them in potting, as at this stage they are exceedingly brittle.

Calanthe Veitchi and the charming Rangmore variety, with the varieties of *C. vestita*, may be grown in the usual stove temperature, kept close to the glass and shaded from excessive sunshine. Evergreen *Calanthes* and their culture do not come within the scope of this article.

Thrips, green fly, and brown scale all attack *Calanthes*, and are best kept under by gentle sponging. The disease known as spot I have not had to deal with. It is possible this may sometimes partly



FIG. 5.—LÆLIA ANCEPS VIRGINALIS.

arise from high feeding, the plants afterwards being stood in cool damp conservatories and cold draughty rooms. This should as far as possible be avoided. The difficulty may be met where a number are grown by frequent changing.—J. SHALFORD.

REST IN PLANT LIFE.

IN "A. D.'s" last note on this subject he is silent on the point as to whether plants rest or not, so presumably he concedes it. Now, it is the term itself he takes exception to; but if not absolutely correct, it is not a bad one after all. "A. D." says, "rest implies recuperation." Certainly; and that plants recuperate themselves during the cessation of growth is abundantly evident. Plant physiology is a delightful study no doubt, but mere workaday observation is all that is required to prove this. Defoliation is only a detail. Evergreen trees rest as well as deciduous ones, and though perhaps I may be dense, I fail to see why we as cultivators need the term to be any further "described, explained, elucidated."

In its practical sense as bearing on cultivation I understand it, so does "A. D.," or he is not the sound practical gardener his writings have for many years proclaimed him. Would a Vine go on producing Grapes without rest? or would any other plant fulfil its functions without it? I think everyone must agree that they would not. If not, why not? Something is wanting that was present at the end of the last resting season. This the plant makes good during its season of rest, hence I take it there is recuperation going on.—H. R. R.

VEGETABLES FOR HOME AND EXHIBITION.

RUNNER AND BROAD BEANS.

It would be difficult to over-rate the value of the Runner Bean, which, being hardier and later than Dwarf Beans, makes an excellent succession. In order to assist the plant to do its best during the long season in which it crops, recourse should be had to deep cultivation with an ample supply of manure to sustain the lower roots. An abundance of fine pods which find favour both on the show board and dining table may be obtained by taking out the soil two spits deep and about 2 feet wide. Good farmyard manure should be dug in at the bottom of the trench, and the soil with one layer of manure a spit below the surface be replaced. The plant then has a deep rooting medium of enriched soil, in which its fibres may ramify and supply the support necessary for its welfare under the strain of pod production. In seasons of drought the benefit of this method of cultivation is particularly apparent.

Runners do not readily lend themselves to any methods of forcing, but in order to encourage them to come in early they are sometimes sown in boxes or pots close to the glass in cool frames in April, and transplanted later in the rows. In sowing for removal soil of a fibrous character should be chosen, so that this adheres to the roots, and the Beans can be transplanted with balls of earth attached. Generally speaking, the first week in May is early enough to make the sowing for a main crop supply, and if the soil has been previously prepared as recommended above a broad drill some 3 inches deep should be drawn out, and the seeds inserted zigzag fashion about 6 inches apart. Many growers sow the seeds in two rows, and insert the poles at a slight angle, lashing them together when they cross at the top. An argument raised against this method is that when the poles are furnished with foliage the ground between the rows is invariably dry, as the rain naturally drips from the leaves to the outer side of the rows. When rows are sown parallel to each other a distance of 8 to 10 feet should be allowed between them, and where a large quantity is required two successional sowings ought to be made at the end of May and middle of June.

When the plants are about 6 inches high the soil should be drawn up to them from each side with a hoe, and the poles inserted. These may be kept from swaying by tying laths or other poles along them horizontally, 6 or 7 feet from the ground. No stopping of the growth is necessary, though it is important that the pods on the lower part of the stems be picked as they mature, in order to encourage those higher up to develop. During hot dry weather water is frequently necessary, particularly on light soils, and if a mulching of littery manure or short grass follow the operation the moisture given is largely conserved.

Growing runners without sticks is a system chiefly adopted by market gardeners and others who have a difficulty in getting the necessary poles. Under this method of culture the rows may be dispersed about 3 feet apart, and the growths kept regularly pinched. One of the drawbacks is that the pods are frequently splashed during wet weather, but this may be averted by mulching between the rows with any material of a littery nature. There are many named varieties of runners, and amongst them Royal Jubilee, Giant White, Ne Plus Ultra, and Prizewinner will meet the requirements of both exhibitors and home growers. Long straight pods of even character are the best for exhibition, taking care to choose only such as are in the best condition for table, and will readily break under pressure of the thumb and finger.

It is not necessary to enlarge on the cultivation of the Broad Bean, as the plant is one of ready accommodation when conditions of culture are fairly favourable. Drought is the most frequent cause of failure, and during the past summer we have had ample opportunities of noticing this where the soil was of a shallow, sandy nature. With deeply worked soil of a sound texture and well enriched with good manure, Broad Beans rarely disappoint us. The taste for this vegetable appears to vary very much, though as an article of food there is but one opinion as regards its nutritious qualities. The Longpod varieties are the most suitable for the early sowings, which should be made thinly at the end of February or early in March, and of these both the Early and the Seville Longpods are good. The rows must not be less than 3 feet asunder, and the plants to supply large pods fit for exhibition purposes should be allowed a distance of from 9 to 12 inches apart. In order to keep up a succession sowings ought to be made at intervals, the Improved Broad Windsor being one of the best for main crop and late use. Beck's Gem is an excellent dwarf variety, and is much appreciated, as the beans are small in size and of a delicious flavour. This variety may be grown more closely.

Black fly is the common enemy of the Broad Bean, and insecticides are frequently used in destroying it. As, however, the plants are not often attacked until the crop is insured the most efficient way of getting rid of the pest is to pinch out the tops of the plants and destroy them. A moist position should always be chosen for this crop, and in order to prolong the season in dry weather, and assist the

production of large pods, supplies of water and liquid manure must be given. For exhibition purposes the best pods are long and filled with tender beans placed closely together. Some varieties produce pods large enough to please anyone, but the beans are dispersed so widely apart in them that many have to be pulled to make a dish. Needless to say such kinds are not the best to grow. All pods of Broad Beans should be removed from the plants as they mature, whether required for use or not, otherwise the formation of others higher up the stems will be checked.—GROWER AND JUDGE.

A GOOD INVESTMENT.

AN APPEAL TO THE "MISSUS."

THE money market is not, judging from what one knows, a matter of primary concern to the great gardening fraternity. The rise and fall of stocks in the horticultural world are chiefly limited to those particular varieties known as Bromptons, East Lothians, or Ten-weeks. Yet few men better know the value of money, I venture to say, than gardeners, and fewer still are more cautious in their calculations in an honest endeavour to make both ends meet; but meet they do, with a long pull and a strong pull, and all praise to many a good "missus," who, doing a lion's share in the tug-of-war, finds, when the ends have met, a remnant over. And she will know what to do with it. But in the way of a good investment our better-half is not above receiving a good suggestion, and such I have to make. It has been made before, but never to the "missus," and herein laid the mistake. At least that inference has been reluctantly arrived at because the prior suggestions have fallen flat. Should some lord and master of a gardener's frugal home think that any insinuation is here implied anent what is vulgarly termed petticoat government, so be it. There is not, I believe, any finer form of home rule, or could we on the broader basis desire any more beneficent example, than that afforded by the Lady who has ruled so long, so wisely, and so well over the destinies of the Empire.

On the occasion of a friendly visit to a neighbour, as we sat over the cup that cheers, I was particularly impressed with the shrewdness of his "missus" when the conversation drifted from "Mums" to money. My friend, producing a glowing prospectus, said, "I think I'll have a few shares in this; what do you think?" What I thought was of but little moment, seeing that the "missus" forestalled me by saying, "No! my money shall never go into that," with a strong emphasis on the negative and a decided inflection upon the possessive. Not too strong or too decided, however, as events proved, for what was shady when floated soon shook to pieces. So the "missus," as chancellor of my friend's exchequer, scored, to the admiration of him who has now a "real good thing" to place before her and all the gentle spirits who rule so wisely.

The Gardeners' Royal Benevolent Institution, dear "missus," is what I commend to your notice, to your shrewdness, and to your good sense. If you will but digest the statistics of this noble Institution, now generally well known, in your well-balanced mind, I have no fear but what the good man, willy-nilly, will be a Royal Benevolent gardener, and to you be ascribed the honour and glory. The notice, now to hand, of the annual general meeting to be held on the 20th proximo, states that nineteen pensioners are to be placed on the funds, ten of whom, having been shareholders in this grand investment scheme for a period extending over from fifteen to thirty-six years, are now to receive the benefits "without the trouble or expense of election." Good, as far as it goes, but it does not go far in noting that there are forty-four applicants remaining, nine only of whom can be elected according as the voters dictate, because the great body corporate of British gardeners simply ignore their plain duty of subscribing to and augmenting the capital chiefly contributed by those generous patrons of horticulture who, amongst the many claims upon them, so prominently recognise the wants of this Institution. The urgency of these forty-four cases, and the anxiety the applicants evince to grasp this prop in their old age, is obvious in scanning the appeal by post to members for their votes.

No need to analyse these pitiful appeals, or to say these people have only themselves to blame. There is not, I suppose, one of the forty-four who does not feel that, "To fail late in life is the worst failing of all;" not one but whose ease is far more eloquent than are any words of mine. There is, too, something pathetic in noticing that ten of these applicants are widows. It may be a natural feeling—or failing, which you will—that one's heart goes out to them in their lonely latter-days, and there is unqualified pleasure in voting for what one feels the most deserving case amongst them. Advisedly I say most deserving, for charity begins at home, and the good old gardener who has gone before, who recognised even late in life the claims of this Institution, surely deserved that preference should be shown by the endeavour to obtain its benefits for the "missus" bereaved.

One fact remains to be faced—viz., that the Gardeners' Royal Benevolent Institution is yet, practically, unsupported by gardeners, of whom there is not one who shall make with certainty that utterly selfish remark, "I shall never need it." So "Knowledge comes, but wisdom lingers." Yet the outlook is not wholly one of gloom in this direction. In the years that have fled this sound investment has not probably been so widely and generally known as its merits deserve, and I think, somehow, that the reports of its good work have oftener found their way into the potting-shed drawer among the plant and seed catalogues than to the gardener's cottage, where it would catch the eye of the "missus." To her I respectfully suggest at least further consideration of the above, relying upon a fair hearing, confident in her sound judgment, and last, not least, knowing that in the tender feelings of a woman's nature, "The quality of mercy is not strained."—A ROYAL BENEVOLENT GARDENER.

APRICOTS.

SUCCESS with the Apricot in England is by no means certain. Even in gardens, with careful preparation of borders and protection of the flowers in the spring, satisfactory results are more the exception than the rule. The great drawback to the culture of the Apricot is that of its being the earliest flowering of fruit trees, generally coming into blossom during February. But this cannot be regarded as the cause of failure in many gardens, for with efficient protection for the blossoms and tender fruit the trees are as notable for vigour as sterility; therefore, the cause of non-success must be looked for apart from the early flowering and the question of protection for the blossom.

The chief reason of failure in this country is, according to my experience, restriction, the trees never succeeding on low walls. On a wall of 10 feet height I once had what was considered the choicest varieties—Early Moorpark, Hemskerk, Kaisha, Moorpark, Oullins Early Peach, Peach, and St. Ambroise; the aspect south-west, elevation 500 feet above sea level, and the North Sea four miles distant eastward. The whole, duly protected with scrim canvas, kept from the trees by poles and drawn up or let down as required, bore well whilst extending after the third year from planting as one year's trained trees: but when they reached the top of the wall, and covered their allotted space, every one except Kaisha began to bear less fruit, and in three years the trees were unprofitable. Indeed, the one tree of Kaisha gave more fruit than the other six trees put together: and whilst this remained healthy and fruitful the other trees, with the exception of St. Ambroise, began to lose their lower branches and a limb here and there from sudden collapse. On another wall, facing due south and 20 feet in height, were Blenheim or Shipley's and Royal, which, never protected, gave excellent crops. The difference could not be entirely due to the hardness of these as compared with the other varieties, but was a consequence of the adaptability of subject to place or *vice versa*. Thus Kaisha succeeded because it did not outgrow the space, also those on the high wall, and the others failed through their being pruned into sterility.

What I wish to impress by the foregoing is the futility of planting Apricot trees against low walls. Large areas of high, old-fashioned garden walls, the walls of stables, barns, outbuildings, and tens of thousands of cottages are the places for Apricots, where they will have a chance to produce enormous quantities of the most luscious of all hardy fruits annually. The climate is better now by drainage and other improvements than it was half a century ago, when Apricot trees were common on cottage walls, and the proceeds went a long way towards paying the rent; the walls of farm houses, and on the high walls of gardens, where it paid to use wool netting for protection to the blossom. Result, luscious Moorpark Apricots, 1500 golden fruits per tree of 36 feet by 13 feet.

SOIL.

If well drained, almost any garden soil will grow Apricots to perfection. It must be deep, a yard is not too much, not that borders need be made of that depth, but just take the soil as it is—a light, rather sandy loam, preferably, and stir it to such depth as will allow the roots to go into it without hindrance. Shallow borders—a few inches of ameliorated soil over chalk, or a hard pan or a stiff one, such as clay, are of no use for Apricots. They do well on warp, on sandy soils, especially alluvial silts, calcareous gravels over chalk not nearer than 3 feet—better 6 feet—and even on stony clays, always provided water does not lodge within 4 feet of the surface. Turn the soil, as in making compost, with the difference of keeping the good soil on the top, or if a loose soil, do not bother about anything but setting the tree, after adding some manure and turning under as for any other kind.

The thing is to select the soil as well as the aspect and space for this choice fruit, abandoning altogether the idea of making it conform to the wishes and requirements of man in any but a natural way. Making soil forestalls both principal and interest. This does not mean that a light soil is not all the better for draining to free it from the water running in quicksand at 3 to 4 feet from the surface, discomfiting Horsetails and Thistles, and rendering it suitable for Apricots. This, and adding road scrapings, lime rubbish, and burned clay to heavy soils, is different from making an excavation and bringing in fresh soil at great expense, or even moving soil 2 or 3 feet and adding substances improving of the staple, than clearing all away and often making a worse staple than that removed or would have been if properly treated by trenching and admixture of manure or other material. Such procedure has no bearing

on growing Apricots profitably, and does not enter into the calculations of growers of hardy fruits for market. A little, sometimes much manure, a turning, and attention to staple and draining, are all the points considered of importance as regards soil. No more is needed for Apricots.

VARIETIES.

Breda and Alberge de Montgamet are regarded as the only kinds that succeed as standards in the open air. Of this I have no experience; perhaps some correspondent will kindly say where Apricots as orchard trees may be found in England. Is it near the coast in the southern counties? On walls they bear freely, Alberge de Montgamet ripening at the end of July and Breda at the end of August, both small, and esteemed in the kitchen and still room. Such, however, are only wall space wasters outside private use, at least so I found, and if ever they are to profit it must be as standards—hence the query.

Blenheim or Shipley's, with Turkey, and even Royal, must be regarded as preservers, Roman being placed in the same category. For cooking and confectionery purposes they do well enough, but can hardly be considered, along with Frogmore Early, as equal to British market requirements except for the purposes named, and certainly not likely to meet much better fate than Plums grown against walls and also in plantations, as the public appetite requires whetting or educating to accept them on the score of profit.

This reduces the list to reasonable proportions, and even then it is questionable if Large Red and Large Early can be considered other than second rate. To name them is enough, and this reduction brings us to the Moorpark and Peach, for out must go the pointed-fruited St. Ambroise. Of Moorpark—needing no bush—we have Beaugé, a large rather late form: D'Alsace, a better grower, and not so liable to lose branches; Hemskerk, a good hardy sort; Powell's Late, unequalled for hardness, free bearing, and good quality, and Early Moorpark, a questionable yet good form, a little earlier in ripening. Of Peach, or Grose Pêche, Oullins Early seems to have a habit different from Moorpark, and though a little earlier does not beat the parent, Peach—the "finest of all" (Rivers).

From the two last forms of Apricots—the Moorpark and Peach—selection may safely be made, as none excel them, green or not over-ripe, for tarts, and for dessert are the only ones attaining the highest standard of excellence.

DISTANCE AND PLANTING.

An Apricot tree, if worth the name, will cover a large extent of wall area. Cordons imply narrow borders, root as well as top limitation, and only Kaisha is advised for that mode without it at 2 feet distance apart. For low walls—say of 6 feet height—plant dwarf fan-trained trees 12 feet apart. But that implies utilisation, there not being any reason why low walls, as well as high, should not give fruit according to the space. It should be remembered the Apricot does well in suburban as well in rural districts. By suburban is not meant the environs of manufacturing centres, but fairly open localities, where the sun is not obscured by smoke and the atmosphere laden with sulphurous and other fumes. It cares least of any fruit tree for the dust of roads, even relishing the sand.

Dwarf-trained are the best, but standards may be employed for walls where dwarfs would be liable to suffer, as against farm buildings to which cattle have access. Fan-trained only are suitable, and they are no better for being large. Evenly balanced branches, not too strong, are of far greater importance, the wood, being well ripened, having nothing to do with trees that are blemished in the wood—in fact, gummed—for it will follow them to the end of their days, and is the great cause of Apricot failure in England.

The roots must not, on any account, be allowed to get dry by exposure to the air. Nurserymen are very particular about this, using mats as the trees are lifted, in the packing shed, everywhere doing their best to make the trees safely endure the lifting and transference. The trees move well early in the spring, for though the blossoming be early the growth comes later; but the middle of February, or as soon after as the weather allows, may be regarded as the time to plant. Take out an opening large enough to receive the roots straight out, not making them fit the hole, for beyond cutting off bruised ends to sound wood, the more roots the better. Arrange the roots carefully, interlayering at all points with mellow soil, and not covering the uppermost more than 3 inches. Mulch to an inch in depth with good sweetened material. Avoid puddling, for ordinary soil in February is just in the right condition for favouring the emission of roots, and to get an abundance of fibres, meaning a good root formation at the start, is the foundation of future health and production.

If the trees are right, and the soil also, there will neither be any use for the knife or watering can for some time, and Apricots then and always show their detestation of the free use of the knife and misuse of the watering pot by producing nothing but leaves, and dying off limb by limb. The little pruning of the cottager and farmer just suits Apricots, and nothing pays so well on the south fronts of cottages and farm houses where the soil suits, as the trees like to push their roots deep into the earth and their branches high into the air, thus maintaining the reciprocal action essential to fruitfulness and health. Plant the trees and let them grow, doing no more than is absolutely necessary to cover the wall equally with fruitful branches from top to bottom. Indeed, to the cottager and farmer belongs the credit of the extension system as applied to wall trees, they always having abundance of fruit when trees on the low wall and restriction system were fruitless, the house being supplied with this fruit from the sources mentioned at remunerative prices.—G. ABBEY.



PLANTING.

If any planter has still this work to perform, and has had the privilege of empty ground, there must be some want of management, for never do I remember a season when there has been so little interruption from early October until Christmas week. The ground has been so warm, and worked so well in almost all cases, that Roses made a few roots at once. I have heard some remark that such early rooting was a decided disadvantage; that the young roots were almost certain to be killed, and would surely be injuriously checked by cold later on. Such is not my opinion. It is entirely different from when Roses are forced both top and bottom, and the former growth removed after roots have become far advanced; in that case great harm does undoubtedly accrue. But with our plants in the open we do not find it so; otherwise, instead of being an advantage to plant early, it would be just the reverse. We have long contended that if we could not move our plants early, and while the ground was still fairly warm, we would prefer waiting until spring. When planted in the depth of winter the roots remain so dormant that a frost or drying wind seems to abstract the whole of the moisture from the top growth. In early planted Roses this is replaced by young roots, as well as from the firmer settlement of soil around them. Another advantage lies in being more certain of procuring the desired varieties when purchasing from trade growers.

If there has been a season during the last twenty years when the wood ripened more steadily and efficiently than the present it does not occur to me. In no cases have we badly matured wood, and if only severe frost keeps off the more tender of our climbers should be a grand sight next summer. But these remarks may appear premature, so I will leave any more about our future prospects.

There is one hint I would like to give some amateur readers, and that is, Do not be in any hurry to prune outdoor Roses should they break into growth during the continuance of mild weather. In some notes upon Rose-growing for market purposes which appeared a few weeks back, I dwelt upon the advantage of bringing on plants in batches. Owing to the mild season those in pits and frames will be more forward than usual, and I would certainly place the second batch into heat a little sooner than would generally be the case.

ROSES UNDER GLASS.

Under glass our Roses are now demanding great attention, and will do so from this time onwards. All pruning must be completed at once, and any dry border in which Roses are planted should have a thorough soaking. Look over climbers, and see that no scale exists. By tackling these pests before young and tender growths appear, we can generally extirpate, or any rate greatly check them; whereas it is not possible to use sufficiently strong measures later on. Now we can use insecticide of double strength, and if the plants are trimmed of superfluous growth, and old leaves that may still adhere, it does not take long to go over the wood with a small brush. Use a little paraffin in the solution, and keep it well moved with the brush, then the mixture will not only work easier, but will cover more ground in less time and be more deadly. Half a pint will go a long way when so used, and very few scale will survive.

As other insects come along, which they are certain to do upon the appearance of new growth and the turn of days, be careful to take mild measures promptly. This applies to both syringing and fumigation. There are few more annoying disappointments in Rose culture than to find one has used too strong measures only a short time before a pleasurable crop would have been realised, and two applications of a weak and safe strength are more effectual.

Propagation by grafting should be in full work now. Those of our own, already done, have seldom looked better, and no delay in the work must be allowed if one is to realise a good plant for next season's use.

Because it is mild, I would not be caught napping in the matter of material ready to hand for protection in the event of a sharp frost. We know how suddenly these come on, and what a lot of work they entail at once.—PRACTICE.

THE PLUME POPPY.

THERE is a growing disposition on the part of many who are embarking upon the cultivation of hardy border flowers to demand an English name for the plants. Human nature is such that many persons, especially ladies, will even decline to purchase a plant with an unpronounceable Latin or Greek name. The Plume Poppy is not so unfortunate as many plants in this respect. Its botanical name of *Bocconia cordata* is easily negotiated, and there are few who cannot remember it. Yet there is something attractive about the English name besides the mere fact of its being in our own familiar tongue. This may lie in its alliteration. Whatever it may be, we find it a popular one, much more so than the other. Although the appearance of the plant at first sight does not dispose us to connect it with the Poppies, yet it is a Poppywort, and fairly entitled to the name, although the genus *Bocconia* differs from the others of the natural order by reason of its having apetalous flowers, followed by one-seeded capsules. I have also heard it called the Great Celandine.

In the "Index Kewensis" there are four species recognised as

belonging to the genus *Bocconia*, which was named after Paolo Bocconi, the Sicilian botanist, the author of the "Museum des Plants," and other works. *B. cordata* was separated by Robert Brown from the genus *Bocconia* on account of differences in the inflorescence, and in the number of seeds. The name Mr. Robert Brown applied to it was *Macleania cordata*, after Alex. Macleay, the Secretary to the Linnæan Society. It is now, however, again restored to its former place with the *Bocconias*. It is synonymous with *B. japonica* and *B. or Macleaya yedoensis*. It appears to have been introduced in 1795, and again in 1866. It is figured in the "Botanical Magazine," t. 1905, and in Maund's "Botanic Garden." It has also been frequently figured in the gardening press and other horticultural works. It is a native of China and Japan. The Plume Poppy is a fairly well known plant, and, indeed, it is in some localities becoming a very common garden flower. It is also a favourite exhibition flower with many, and is often very valuable in a large stand, where its elegant panicles of buff-coloured flowers frequently give a needed effect to the display.

It is as a border or wild garden plant that it is, however, seen to most advantage. Set well back in a broad border, or planted in a mass on the grass, or in the wild garden, its beautiful heart-shaped bronzy glaucous leaves, which are prettily lobed, and its graceful flowers raised aloft on stately stems, look exceedingly well. As Maund says in his "Botanic Garden":—"Exposed stamens alone, surrounding the ovary, form these airy flowers; thus, destitute of their legitimate apparel, a corolla, they have a light, graceful, and airy beauty, which, added to the peculiar rich bronze-tinted foliage, renders this plant a most desirable occupant of the herbaceous border." Its height varies according to the soil and position it receives, and it may be said to vary in general from 3 to 8 feet. I have seen it as much as 10 feet high, but this was in rich well-cultivated soil.

B. cordata is perfectly hardy, and increases rapidly by running at the roots. These runners, if taken off, will soon form flowering plants, especially if placed in pots when taken off during summer and grown on under glass. It does not appear to be too fastidious in its requirements, although only seen in full beauty in good soil and in a well-drained but fairly moist situation. It does not object to a little shade, but looks better in the sun. There has been lately introduced a variety named *B. cordata carnea*. The flowers of this have been described as of a pinky flesh-coloured tint. I have grown this, but regret that I cannot, in the meantime, speak very favourably about it. It may improve upon further acquaintance, but it seemed to me to be dull looking, and wanting the effect of the typical plant. Admirers of stately but elegant plants of distinct appearance would do well to include the Plume Poppy in their purchases when procuring new flowers.—S. ARNOTT.

HALL FOR HORTICULTURE.

A BEGINNING having been made by "D., Deal," towards the crystallisation of the actual requirements in relation to a hall for horticulture in this metropolis, the scope might be usefully extended. We have heard of space required for the Chrysanthemum Show alone, varying between the square yards obtained last autumn at the Aquarium and the extent of St. Paul's. It may be useful to the private purpose of the promoter of a St. Paul's idea to prove to his satisfaction the inability of getting away from the Aquarium, but there must surely be an approximate estimate obtainable from a more serious class of leading organisers of all the floricultural societies, if they will make an effort to give the figures required in useful dimensions for the contemplated future shows. The offices required for committee meetings, lecture room, and library could be had "upstairs," or on the ground floor of that portion of the hall not glass-roofed.

Mr. H. Cannell's figures *re* revenues, given a few weeks ago on page 606 of your Journal on this subject, might serve as a useful basis for the erection of buildings alone, leaving the question of freehold site to be discussed with full publicity. That the hall should be erected on the Thames Embankment by preference few will doubt, as it would admit of miles of private carriages and their affluent owners to become habitués at the new hall, so that the full extent of a series of floricultural attractions which the Committee may be able to bring before the well-to-do of our metropolis and provinces.

If thus the joint societies show their readiness to assist to their full ability, could not the figure for the possible freehold required be ascertained, not a fancy figure (asked) surely! but a serious limit be stated that might lead to business? If this figure be looked at by some of our wealthy citizens magnanimously disposed, would it be so utterly futile to see an advance made, and perhaps half the amount for the freehold offered by one or more men of wealth, on condition that the other half be contributed by the many well-to-do who spend their hundreds annually on their own private gardens and on cut flowers, and whose numbers, as members of the various floricultural societies, are increasing at a great rate, especially the last year or two? The said societies should each canvass among their own members, and outside *ad libitum*, and if there be any earnest in the love for flowers, surely this richest city of our globe could hardly continue to lag behind less favourably situated centres.

Expansion of revenue could be suggested from other sources for the new hall, and which might be discussed hereafter, and might mean some extension in wings of the building. Why, indeed, should the main hall not be let for exhibitions of all kinds acceptable to the Committee? which might mean quite an unexpected run of income, as such a situation alone would attract in an astonishing degree beyond what any other building in London could do. Indeed, promoters might do worse than reckon with this element in determining the dimensions.—H. H. R., *Forest Hill*.



WEATHER IN LONDON.—The second half of last week was perfectly dry, and though there was little frost, the weather was decidedly more seasonable. On each day the sun shone brightly at intervals, Friday proving particularly bright. On Saturday morning there was a white frost of about 5°, but it was quite warm later. Sunday was dull throughout the day, but no rain fell. Slight frosts occurred on Monday and Tuesday nights. Wednesday was dull and mild during the forenoon.

WEATHER IN THE NORTH.—The weather of the past week has been most unseasonable, dull and brightish days alternating, while a great deal of rain has fallen. Sunday was a sunny spring-like day; Monday very wet and gusty in the former part; and Tuesday morning, while fair, was dull, with the thermometer at 43°.—B. D., *S. Perthshire*.

ROYAL HORTICULTURAL SOCIETY AND THE VICTORIA MEDAL.—The Council having been consulted as to a proper mode of the use of the Victoria medal by members of the trade, have decided that the only permissible method is by the letters V.M.H. following the name of the holder of a medal. No other mention of the medal can be properly made in any publication pertaining to horticultural trade, or relating thereto.—W. WILKS, *Sec. By order of Council*.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—On Thursday, January 20th, the above Institution will hold a special general meeting to appoint two trustees, in succession to the late Dr. Hogg and Mr. J. Lee, who has resigned. At the same time the ordinary general meeting will be held, to elect pensioners to the fund, to transact the customary business, and to elect officers for the ensuing year. As usual the meeting will take place at Simpson's Hotel, Strand, at three o'clock precisely, under the presidency of Mr. Harry J. Veitch. The Duke of Portland has fixed Wednesday, June 8th, as the date of the fifty-ninth anniversary festival dinner (sixtieth year), at the Hôtel Metropole, of this Institution.

HARDY FRUIT CULTURE IN HUNGARY.—The cultivation of hardy fruits in Hungary has so greatly developed of late years that an official inquiry has been instituted with a view to ascertaining the number of trees and the number of varieties of the several kinds grown in the kingdom. But in consequence of a rumour having been circulated to the effect that the inquiry was being made for the purpose of taxing the trees, those engaged in the investigation experienced considerable difficulty in verifying the returns furnished them. According to a contemporary the statistical details are therefore hardly so trustworthy as could be desired. Subject to this qualification, the number of fruit trees enumerated in Hungary was 65 millions, of which 32 millions were Plum, and 14 million Apple and Pear trees. In Croatia and Slavonia 8,500,000 Plum trees, and 2 million Apple and Pear trees were scheduled.

EMPLOYEES' DINNER AND PRESENTATION AT CHELTENHAM.—On Friday night about seventy of the employés of Mr. J. Cypher, of the Queen's Nurseries, were entertained by him to a sumptuous dinner, prepared on the premises and served in one of the glass houses, which had been transformed into a dining-room for the time being. Mr. J. Cypher presided, and there were also present Mrs. and Miss Cypher, Mr. W. J. Cypher (Vice-Chairman), Mr. and Mrs. John Cypher, Mr. and Mrs. Frank Cypher. The dinner was partly in celebration of Mr. J. Cypher's seventieth birthday, and two presentations were made. These were to Mrs. Cypher and Miss Cypher. The former consisted of a silver-plated cheese dish and cover, bearing the inscription, "Presented to Mrs. J. Cypher by the indoor staff of the Nursery, January 7th, 1898," and that to Miss Cypher was a pair of massive alabaster vases, accompanied with a card on which was inscribed, "Presented to Miss Cypher as a mark of respect by the outside staff, January 7th, 1898." Mr. W. J. Cypher made the presentations on behalf of the men. Mr. Cypher responded for Mrs. and Miss Cypher, and assured them that as long as they lived they would appreciate and remember the kindness shown them. He further alluded to a present to himself some time ago of an easy chair, which he also appreciated and was very thankful for. During the evening harmony and recitations enlivened the proceedings, and amongst those who contributed to the pleasure were Messrs. Booth, Weaving, Radcliffe, Tilling, Jones, Clement, and Joyner.

CROYDON HORTICULTURAL SOCIETY.—We are informed that the summer exhibition of this Society will be held on Wednesday, June 29th.

DEATH OF MR. J. KENT.—I regret to inform you of the death, on Friday last, after many weeks' suffering, of Mr. John Kent, who for several years had been gardener to Mr. Francis Tagart. There were many beautiful wreaths and other devices, and much sympathy was shown for the widow and children.—W. STADDON, *Cote House Gardens, Westbury-on-Trym*.

CHESTER PAXTON SOCIETY.—The opening meeting of the above Society's winter session was held in the Grosvenor Museum on Saturday evening last, under the presidency of Mr. Barnes, when the opportunity was embraced of presenting Mr. G. P. Miln, the Hon. Sec. for the past eight years, with a gold watch and chain, as a grateful expression of thanks for the services he has rendered the Society during this time.

DEVON AND EXETER GARDENERS' ASSOCIATION.—Mr. W. Charley presided and Mr. C. H. Clark occupied the vice-chair at the annual supper last Friday evening at the Castle Hotel of the members and friends of the Devon and Exeter Gardeners' Association. The Chairman said the Society was established to promote the mutual improvement of its members, and to advance horticulture. The Society had succeeded in a remarkable degree. It had not only made a good name for itself in this city and county, but its good work had been recognised by competent authorities elsewhere. Nearly every branch of gardening and its allied subjects had been touched on at the fortnightly meetings, and many of the papers read bore the hall-mark of excellence, and must have been of benefit to the members.

WALL TREES.—When I looked in upon Mr. J. Miller at Ruxley Lodge Gardens on a mild afternoon of last week I found him busily engaged in drawing nails from his Peach and Nectarine trees, that the young wood might largely fall away from the wall, the buds already showing too much evidence of excitement. Mr. Miller, who is one of our oldest gardeners in harness, remarked that very likely many gardeners were busy nailing their trees up. He, however, saw that if the mild, open weather continued there was every probability that bloom would expand fully a month too soon, and he regarded unnailing as far more effectual in checking early expansion than any other course. Some may let down their canvas shelters, or clothe the trees with Fir or Laurel boughs, but these things often in weakening the buds do more of harm than good. He thought nothing was so likely to retard development as the simple plan of unnailing the wood.—A. D.

GRAND YORKSHIRE GALA.—Last Friday night the annual meeting of the guarantors and life members of the Grand Yorkshire Gala was held at Harker's Hotel, York. Alderman Sir Joseph Terry occupying the chair. There was a good attendance. The Chairman, alluding to the Gala in June, said that circumstances had prevented the public witnessing the usual beautiful floral exhibition. He believed the flower show would have been of an exceptional character, and one which would have been immensely appreciated. A strong wind, however, on the morning of the fête wrecked the flower tents, and rendered all the perfected arrangements but work in vain. The damage done amounted to about £600, a catastrophe which had never been previously experienced. On every hand the circumstances had created regret. Expressions of sympathy had been received from several of the exhibitors, and one gentleman—Mr. Atkinson of Sheffield—had sent a donation of five guineas to the Society. As regarded the coming fête, they had again made satisfactory arrangements with the Bootham Asylum authorities. Other pleasing circumstances were that the Lord Mayor (Mr. Edwin Gray) and the City Sheriff (Mr. Harold Copperthwaite) had been elected life members, and the Lord Mayor had consented to become President for the current year. Sir Joseph Terry was unanimously elected Chairman of the Council, and Mr. Border re-appointed Vice-chairman. The other officers appointed were:—Treasurer, Mr. Joseph Wilkinson; Secretary, Mr. C. W. Simmons; and Auditors, Messrs. Pearson and Taylor. The following members were elected on the Council:—Alderman Sir Christopher A. Milward, Messrs. R. Anderson, G. Balmford, J. Blenkin, J. Biscomb, J. W. Craven, M. Cooper, H. C. Day, Alderman Dale, G. Garbutt, T. G. Hodgson, J. J. Hunt, A. Jones, G. Potter-Kirby, E. B. Kendall, T. M. Lambert, Alderman Purnell, E. S. Robinson, H. Scott, W. S. Sharp, and J. B. Sampson, with Alderman Clayton and Councillor Foster. The following grants were made for the ensuing Gala:—Floral arrangements, £650 (including £50 as a Victorian commemoration prize, offered last year, but not awarded); music, £200; fireworks, £100; amusements, £150; balloons, £60.

— **DEATH OF MRS. G. SPRINGTHORPE.**—A wide circle of friends of the esteemed gardener at Coombe Court, Kingston-on-Thames, will feel for him profound sympathy on learning of the sudden death of his wife, which took place early on the morning of December 30th. Mr. and Mrs. Springthorpe had led a very happy wedded life of seventeen years. Five children are left, four of which are quite young. The calamity has brought deep sorrow into what was so recently a very happy home.

— **CAMPHOR IN AUSTRALIA.**—The Camphor flora, it is well known, grows very freely in these colonies. The increasing demand for camphor for use in explosives and in the manufacture of celluloid gives greater importance than ever to this commodity. The Japanese commenced to prepare it by distilling the leaves and branches of the trees instead of destroying only full-grown trees for the purpose. It seems to be worth while to ascertain if the shrub growing in the warmer climates will bear cutting sufficiently well to yield an adequate return of camphor when distilled.—(“Chemist and Druggist.”)

— **THE CANNA DISEASE.**—In a recent bulletin of the Trinidad Botanic Gardens it is stated that one of the new strains of Canna imported for the Gardens has been badly attacked by a yellow rust called *Uredo Cannæ*, described as a parasite on Cannas from Brazil. Bordeaux mixture seems to have had no effect upon the fungus, and the infested plants soon die. This disease has not hitherto been heard much of, but if its virulence and deadly character are not exaggerated it soon will be. Meanwhile, we have no doubt that stringent measures are being taken to limit as far as possible the sphere of its operations, otherwise the queenly Canna will be in some danger at what is practically the beginning of its horticultural career.—(“Gardening World.”)

— **CISSUS BERRIES.**—The berries of *Cissus Ampelopsis* of the Middle and Southern States are most remarkable as well as beautiful in colour, clear pink, purple, rich blue, and an almost emerald green occurring in the same cluster. The botanists describe them as bluish, bluish or greenish. They much resemble those of the Chinese species, often cultivated in this country for its beautifully coloured fruit, and are not less beautiful; but while in the latter the prevailing colour is a rich Nile blue verging to emerald green, purple, and pink shades, especially the latter being exceptional, the reverse is true with the American species, in which a delicate lilac-pink is the predominating hue. Like the blue berries of *Cornus circinata*, the berries of this climber, which in the forest completely covers large trees with a luxuriant drapery of foliage, are a favourite fruit of many kinds of birds, particularly the catbird, brown thrasher, wood thrush and flicker, and on this account, if no other, should be grown by all lovers of birds. The fruit of *Cissus* stans, another southern species, is also very distinct in its colouring, the extremely glossy berries, the size of peas, ranging from light pink, through garnet, red and dark crimson to jet black. The elegant pinnate foliage of this vine is unique in its peculiar dark bluish-green colour, the upper surface of the leaves having a semi-metallic lustre.—(“Garden and Forest.”)

— **ROYAL BOTANIC GARDENS, CALCUTTA.**—The magnificent Gardens across the Hooghly River have been ruled over by a long line of illustrious botanists—botanists whose reputations have been world-wide. Wallich, Roxburgh, Griffith are names which recall the early struggles of a science to establish its roots in the East and spread its branches. Dr. George Kiug, the retiring Superintendent, has, perhaps, done more to popularise and extend the usefulness of the Royal Botanic Gardens, Calcutta (or Seebpore, to be more exact), than any of his illustrious predecessors. He has ruled over its destinies for many years. The early struggles of the writer of these lines in endeavouring to master the subtle intricacies of Lindley's classification of certain “alliances” of “perigenous exogens,” of De Candolle's natural classification, and the complicated artificial classification of Linnæus, are all associated in his mind with the name of Dr. George King, to whom he is indebted for much of his botanical education. Dr. King will be succeeded by Dr. David Prain, who has for several years held the post of Curator of the Herbarium of the Royal Botanic Gardens, Seebpore, where he has done excellent work. No better selection could have been made, and we congratulate Dr. Prain on his appointment and the Government of India on their sagacity in putting the square man into the square hole for once. Dr. Prain is an erudite scholar and a high authority as a botanist. He is the author of several learned botanical monographs, and we have every confidence that under his rule the Botanic Gardens will continue to extend their usefulness in the future as they have in the past under the guidance of the genial and learned gentleman whom Dr. Prain succeeds.—(“Indian Gardening.”)

— **A GIGANTIC FOSSILISED OAK.**—An influential deputation of geologists waited upon the Sewage Outfall Committee of the Stockport Corporation, and presented a petition, asking that the gigantic fossilised Oak tree found at Cheadle Heath might be preserved. Professor Boyd Dawkins has estimated that the tree is between ten and fifteen thousand years old. It is desired to preserve the 40-ton fossil in bulk, or turn it into furniture for public buildings.

— **THE QUEEN AND KEW GARDENS.**—The Queen has decided that the old Palace at Kew shall be opened, during her Majesty's pleasure, as a public museum, under the same management as Kew Gardens; and by her wish the grounds belonging to what is known as the “Queen's Cottage” will also be utilised in connection with the Royal Gardens, a very attractive addition being thus made to the Gardens, the amenities of which are enjoyed by the public.

— **ROYAL METEOROLOGICAL SOCIETY.**—The annual general meeting of the Society will be held, by kind permission of the Council, at the Institution of Civil Engineers, Great George Street, Westminster, on Wednesday, the 19th inst., at 7.45 P.M., when the report of the Council will be read, the election of officers and Council for the ensuing year will take place, and the President (Mr. E. Mawley, F.R.H.S.) will deliver an address on “Weather Influences on Farm and Garden Crops,” which will be illustrated by lantern slides. The above meeting will be preceded by an ordinary meeting, which will commence at 7.30 P.M.

— **DECEMBER WEATHER IN SOUTH WALES — HEAVY RAIN-FALL.**—Mr. W. Mabbott, The Gardens, Gwernllwyn House, Dowlais, Glamorgan, writes:—“The weather here during the past month has been worthy of this record-breaking age. Total rainfall 13.34 inches, a monthly record. Maximum fall, 3.30 inches on the 29th, a record for any twenty-four hours; previous record 3.18 inches in November, 1895. There were six daily falls of over an inch during the month, which is another record. Rain fell every day from the 5th to the 16th inclusive, and from the 26th to the 31st. Rain fell on nineteen days. Total for the year, 63.42 inches. Mean maximum temperature for the month, 42.9°; highest reading 53° on the 17th; mean maximum, 30.5°. Lowest reading 13° on the 1st; below freezing point on fifteen days. Very strong cold winds the beginning of the month, but towards the end of the month much milder. Ten sunless days during the month, 106 during the year.”

— **IRIS RETICULATA.**—This is a hardy plant, but requires, to grow it well, a warm corner and a bed of pure light sandy loam; in the ordinary soil of an old flower garden the bulbs are apt to rot. This and many other small hardy bulbs will generally break up into offsets and dwindle under pot cultivation. The commonest Crocus or Tulip will do the same. Grow the Iris as I have described; take up and store in dry earth or sand when the foliage dies down, and select the best bulbs to flower in the greenhouse; in the autumn restore the bulbs to their old quarters. They will come round again after one season's growth. The Peacock Iris should be grown in the same way, but absolutely requires a glass frame over the bed. Pot culture is, however, possible for such plants, and I recommend the following treatment: Use rather large pots—say 8 inches across; soil, very sandy pure loam; drainage, one or two large crocks with a good large handful of moss over them. Put in plenty of bulbs—say 2 inches apart, grow them in a good cold frame through the winter, and bring them into the greenhouse in the spring to flower.—R. C.

— **LOUGHBOROUGH AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.**—The opening winter session of the above Association took place on January 4th, Mr. J. Lansdell of The Gardens, Barkby Hall, Leicester, giving an interesting and instructive lecture on “Soils.” The lecturer, speaking of the formation of soils, referred to the constant action of the atmosphere and rain, which caused something like 1 foot of soil to be washed from the hills towards sea in the course of a thousand years. In proof of this, statement Mr. Lansdell handed around some samples of Mountsorrel stone (the hardest kind of stone in this county) which had become quite pulverised and amenable to cultivation. Clay soil was referred to as being the outcome of felspar rock—the best garden soils should contain about fifty per cent. of clay. The lecturer dealt with the different colour of soils, their analysis, and the mechanical operations necessary to add to their fertility; quoting statistics as to the beneficial effect of draining to promote vegetation, by creating a higher temperature in the land, thereby making it admissible to nitrogen, the principal agent in the cultivation of vegetable life. Mr. A. Hamshire presided over the meeting. A hearty vote of thanks was accorded the lecturer and chairman.

— MY GARDEN DIARY.—A copy of this admirable little Diary, which is published by Messrs. Sutton & Sons, Reading, has just reached us. It is really surprising how much valuable information of a wholly practical nature they have been able to condense in such small compass, and the book ought to be of assistance to everyone engaged in the garden. Each month has its calendar of operations given clearly and concisely, the facing page being left blank for notes that will be useful for future guidance. The paper is of excellent quality, and the printing of the best. The motto that has been adopted for the book, "Doing things in good time is the main secret of successful gardening," is full of meaning, and embodies the essence of truth.

— ESPARTO GRASS IN ALGERIA.—According to a report issued by Mr. Scratchley, the British Vice-Consul at Philippeville, Algeria, a strong feeling growing in that country has arisen against the importation of "Alfa" into England. "Alfa," "Sparto Grass," or "Esparto Grass" (*Stipa tenacissima*), is a plant which produces a paper more supple, yet with more resistance, than that made from other plants. It is mainly used by our manufacturers in making *papier de luxe*. Out of 709,546 cwt. of Esparto exported last year from Algeria, over 664,000 cwt. came into England, and our manufacturers have practically had the monopoly of this article since 1863. The chief reason for this monopoly has been that in the manufacture large quantities of chloride of lime are required. But this difficulty has now disappeared, since electricity has been introduced as a bleaching agent. The probability is, says a contemporary, that the Algerians will now establish manufactories of their own in Philippeville, and thereby create a profitable industry of an article which, in France at least, would find a ready sale. Last year over 7,000,000 acres were covered with the plant. The difficulties likely to arise are scarcity of water, lack of fuel, and insufficient railway communication.

— SPANISH CHESTNUTS.—The nuts of the so-called Spanish Chestnut form a considerable proportion of the unenumerated fruits imported during the autumn months, and large supplies are sent us from France and Spain. The French Chestnuts are ready for sale earlier than those from other countries, and consequently hold the market at the outset. The bulk of the French crop is exported, and being the first to arrive here the nuts realise a better price, and then the dealers supply themselves from Italy, from which country they import as much as 50,000 cwt. annually. The Italians, however, are making efforts to establish a direct trade with England. A contemporary says that their chief difficulty hitherto has been that the nuts are apt to germinate, and thus become unfit for the market. A method of checking this germination is said to have been discovered, and is stated to be carried out in the following way:—The nut is soaked for seven or eight days in a tank and well stirred daily, after which it takes about a week to dry again. This seems to sterilise it completely, and in this condition it can be exported satisfactorily. It is a remarkable fact that if a second lot of Chestnuts are put in the same water they will be sterilised in about half the time. This season a large quantity of the Italian nuts have been placed on the British market.

— FRUITS ON ARCHES.—I observe the new issue of the Royal Horticultural Society's "Journal" includes your part representation of Mrs. Chrystie's Gooseberry trellis at Great Bookham, Surrey. I have often thought, even before seeing this trellis, because of the capital trellises I had some time previously noted at Claremont, that excellent results might be obtained from wire arches clothed within with either single or treble cordon Gooseberries and Currants. The trellises at Claremont are about 3 feet apart. That would be too narrow for an archway, but 5 feet width should do admirably. It would be needful to have the supports of iron wire, and at intervals of about 9 inches pierced with holes, through which the wires could pass, these being firmly secured at either end. A trellis of 5 feet wide at the base should rise in the apex to a height of 6 feet 6 inches. The bushes should be planted on the inside, and about 12 inches apart. Then it would be desirable to select fairly strong and equable growing varieties, so that furnishing might be pretty much alike. A footpath should run through between the cordons, but it would be best that it be of the ordinary soil trodden and raked fine, and if desired, could be strewn with long straw litter during the fruiting season. There is no reason to assume that ample light and air would not penetrate to the cordons, and mature buds as well as ripen fruit. Planted as advised, all the fruit would hang beneath, and with netting thrown over on the outside, the whole of the fruit could be admirably protected from the birds. Once well in fruit, and carefully pruned and manured, the plants would produce such fine crops as would soon repay the first cost of the archway and planting.—A. D.

— TUBERCLES ON THE ROOTS OF PEA PLANTS.—Some experiments have been conducted at the Louisiana Experiment Station, U.S.A., with the view of ascertaining the influence of deep and shallow planting upon the root tubercles of Pea plants, the depth to which the nitrifying germs penetrate, and the results of transferring them to different host plants. The field Pea was planted at depths varying from 1 inch to 6 inches, and the root system was best developed in the case of plants from seeds placed at 2 inches or 3 inches from the surface. Pots were filled with soil taken at depths varying from 1 foot to 3 feet, but tubercles were found in relatively small quantities only on those plants grown in soil not more than 12 inches below the surface, the rest having no tubercles. When the surface was artificially inoculated with germs, root tubercles were produced in abundance. The experiments, says a contemporary, also go to show that each species, or at most each genus, of plants, has a different microbe peculiar to it.

— HESSLE GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—At a meeting of the above Society, held on Tuesday, January 4th, Mr. F. Mason, gardener to Alex. Smith, Esq., Woodleigh, Hessle, read a comprehensive paper on the "Forcing of Flowering Plants." Commencing with describing the most suitable kinds of houses for early and late forcing, he passed on to the forcing of bulbs and roots, classifying them in the different varieties most suitable for succession, also the method of cultivation. Then he referred to the multitudinous varieties of flowering trees, shrubs, and Roses, arranging them in the different positions according to the amount of forcing required. The excellent discussion that followed the paper brought forth the suggestion that a spring show should be held in connection with the Society, where a great number of forced flowers could be seen to advantage, a suggestion that we hope will be carried out, and would, no doubt, meet with every success. Mr. G. C. Coates, gardener to W. Wheatley, Esq., Anlaby Road, Hull, showed some good blooms of *Chrysanthemum Dennis Smith-Rylands*. A vote of thanks to the essayist and Chairman terminated the meeting.—G. W. G.

— APPLE STIRLING CASTLE.—For dwarf trees especially I cannot recommend a more suitable Apple than this. It appears to me to have all the good qualities of the Hawthornden—earliness, productiveness, high culinary quality, and compact growth, yet without the proneness to canker which renders the Hawthornden unsuitable to many soils. Were I planting dwarf trees largely with the view of deriving the earliest profit by the sale of their fruit, I should certainly have a good number of Stirling Castle. In a long row of trees in twenty-five varieties, the three which have proved the most valuable by their free and constant bearing, and the excellence of their produce for culinary purposes in the autumn, are Lord Suffield, Stirling Castle, and Cellini, coming into use in the order named. I am scarcely able to say which of these three I have found the most serviceable for home use. For travelling the Stirling Castle is the best, not bruising so much as the others named. The soil of the garden is rather light, and Hawthornden cankers excessively. In this soil Stirling Castle requires no root-pruning and but little summer-pinching, but grows into a natural and fruitful bush which anyone can manage. No better recommendation than this ought to be required by amateurs.—B. B.

— ARE BANANAS BENEFICIAL?—In an exchange we read, says the "Tropical Agriculturist," that a boom in Bananas, baked Bananas, has been started in the United States, the well-known fruit being now said to be an "ideal food" for the nervous, the anæmic, and for brain-workers. Strange to say the raw fruit is said to be dangerous, as it contains "germs;" but when baked it acquires properties never heard of before. In this country we cannot get Bananas in perfection; but they have them in fine condition in New York, to which city and other places on the Atlantic seaboard they are quickly transported from the Bahamas. Fruits of *Musa paradisiaca* and *M. sapientum*, the Banana and the Plantain, have long been known as a staple article of food in tropical countries, where they are cultivated just as the cereals and the farinaceous tubers are in temperate regions; in fact cultivation has produced considerable variety in form, colour, and flavour. Humboldt and Boussingault estimated that in a suitable climate, and well cultivated, a Banana plant will produce on an average three bunches of fruit weighing 44 lbs. each per annum, and that in hot climates more than 130,000 lbs. of good food could be grown per acre—an amount greatly in excess of the yield of Potatoes, which are, moreover, said to be less nutritious. That has, however, been disputed; but all travellers and investigators aver that the Banana is an excellent food baked, roasted, fried, or boiled. In this country bunches weighing as much as 80 lbs. have been grown in hothouses.



CHRYSANTHEMUM EARLSWOOD BEAUTY.

THE craze for immense Japanese Chrysanthemums appears to have put the more homely single varieties completely in the background, and a good collection is comparatively seldom seen. This is certainly a matter for regret, as few flowers that are at command in the winter are more graceful or more useful for decorative purposes than these. For light, elegant arrangements they are really admirable, and fortunately they last in good condition when cut and placed in water for a very long time. The natural result of this neglect is that raisers of new Chrysanthemums pay only a small amount of attention to them, and new varieties are consequently not often seen. Of the few that have been shown this season, Earlswood Beauty, of which we give a photographic illustration, ranks amongst the very best. The flowers are large, the ray florets being of great substance. The colour is white with faint blush suffusions towards the tips of the florets. The raiser was Mr. W. Wells of Earlswood, to whom we are indebted for the photograph.

THE N.C.S.—THE SLAVE OF THE AQUARIUM.

RECENTLY, through the assistance of your columns, I attempted in clear and courteous language to convey to your readers the impressions I then felt, "That the N.C.S. was not holding its own in the furtherance of its objects as the premier Chrysanthemum Society against the rapid strides and successes gained by several provincial centres."

Writing, as I did, on my own initiative, I did not anticipate the large amount of support and congratulations which have followed in corroboration of the views to which I so reluctantly gave expression. The result has been most encouraging, and clearly establishes the fact that a strong feeling exists throughout the country against holding exhibitions of the finest collections of cut blooms and plants in a building so thoroughly unsuitable for the purposes of artistic arrangement and effect as the Aquarium has proved itself to be. This has been admitted by every writer with the solitary exception of Mr. Richard Dean.

These expressions of opinion should be sufficient to convince Mr. Dean that there exists a very large amount of public dissent against the continuation of the Royal Aquarium as the home of the N.C.S., and to warrant him in assisting his Committee in seeking for a more desirable quarter, and if not found to report fully to the supporters of the N.C.S. the result of their labours.

I have carefully read all that has appeared for and against the present abode of the N.C.S., and find, as others must have found, that not one of your correspondents has so strongly set forth the utter weakness of the Society on the lines it is now running as its own Secretary has; and the many reasons and obstacles he so freely put forward in favour of continuing its present policy only prove most clearly, and beyond all contradiction, that the Society as now constituted is the slave of the Aquarium authorities, and is at present unable to wrench itself from its grip.

I will not attempt to follow Mr. Dean in all the praises he has indulged in favour of the Aquarium Company and its privileges; but unfortunately for him his views are so strongly in opposition to all others, and these he "floats so gaily aloft," that the whole context of his exultations, instead of making a favourable impression, has the opposite effect of exhibiting the weakness of our present constitution when he says "that without the co-operation and valuable assistance furnished by the Directors of the Royal Aquarium the National Chrysanthemum Society cannot exist." Fellow workers, there is food for contemplation. Are you content with the humiliation?

I am no ultra-purist or sentimentalist, but delight in "mutual converse, warmth, light, and life," and I hope I shall not be accused of egotism when I say that I am well versed in a large number of the varieties of Chrysanthemums that have been in cultivation for upwards of thirty years. Our "champion" and I met as exhibitors at Southampton in 1880, and I had a successful career as an exhibitor previous to that date, while at the present day I am responsible for a very large public display, which is usually open daily for seven or eight weeks, so that I do not write without some knowledge of the flower and acquaintance with arrangement and effect.

Grand blooms have hitherto found their way to the Aquarium, and the Society has been able to hold its own in both quality and quantity, but of late neither a satisfactory arrangement nor proper effect has the N.C.S. been able to contribute to the "devotees who worship at its shrine." Through an inability to furnish these important elements the Society must in time lose considerable status, and then will both quality and quantity of blooms, together with subscribers, rapidly diminish.

What a soothing and lasting effect any novelty in artistic arrangement has on public opinion. As an instance of this, the neat arrangement of cut blooms with table and berried plants, first commenced at the early Kingston exhibitions, is now adopted by nearly all our local and provincial shows. The magnificent and artistically arranged groups first instituted at Hull are influencing exhibitors throughout the country, and are fast ousting the formal packed groups which used to be so con-

spicuously set up with sticks and pots so glaringly visible as to largely detract from any pleasing effect.

The encouragement of pleasing styles in beauty and effect is as necessary for the "premier" Society to cultivate for arousing "new-born interest" as is the offering of substantial prizes for the best flowers. Any Society which through force of circumstances is unable to combine all these elements in its exhibitions cannot impart the useful knowledge which its votaries look for, and should rightly receive.

It does, indeed, seem strange, if true, that in London with its vast populace, amongst which can be found as many lovers, growers, and enthusiasts of the autumn queen as in any other part of Great Britain, that a society founded solely for the purpose of promoting its cultivation cannot exist without a yearly subsidy furnished by another organisation whose objects and interest are, in comparison, as wide apart as the North and South Poles.

During the past two decades has the "National" swung on the same pivot? Where there was one grower in its early days there are now hundreds, and I might say thousands, and yet this Society, with all its boasted progress, is utterly unable to do that which nearly every local and provincial society can do, and is doing, from the Land's End to Aberdeen—namely, holding exhibitions purely by their own strength and paying their way.

The "National," with all the "assistance and co-operation" received from the Aquarium Directors can only boast of about £100 reserve fund.

If this crutch is necessary to prop us up, would it not, I ask with all seriousness, be more prudent to hold fewer exhibitions for a time in order that we may be able to put aside that which would make us more really independent when the crisis came, which sooner or later, if we continue in our present fettered state, must come?

Mr. Dean prides himself on four exhibitions, but as to the September show, as I said in my previous letter, the Committee knows very little of its working. In the N.C.Society's report for 1894 I find the following:—"Arrangements have been made with the Royal Aquarium Society to hold three exhibitions in the present year as in 1893—in October, November, and December," and in the report for 1895, "The Committee have arranged for the holding of three exhibitions at the Royal Aquarium during the months of October, November, and December; and a Dahlia show will be held by the Royal Aquarium Society in September, as heretofore, at which prizes will be offered by this Society for early Chrysanthemums, and these will be supplemented by a grant of £10 for Dahlias."

These early flowering Chrysanthemums, however much I admire and cherish them for displays out of doors in the autumn, are scarcely suitable for an exhibition, when, at the time they are in flower, there are a host of other flowering plants far more striking and attractive, and the £20 odd awarded in prize money at this show, together with the grant of £10 towards the Dahlias, would be far better serving the object and purposes of the National Chrysanthemum Society if placed to the reserve fund or even added to the prize list for the November exhibition. It would then at least be awarded in accordance with the objects of the N.C.S.—the sole encouragement of raising and cultivating the Chrysanthemum.

That amount of £30 represents the subscription of 120 members, which is a consideration, and should be well weighed before receiving the approval of the Committee in making the grant for the forthcoming season.

From the report it does appear that in London there is a difficulty in finding a more convenient home than the present one; but no one during recent years has tried to find a place, and after the expression of opinion made by several eminent persons at the Hotel Metropole, it was clearly the duty of the Committee to have taken some steps, and reported the result of their labours at the annual meeting next month.

The Agricultural Hall has been named. During the recent cattle show I questioned myself on the point, and could not help feeling that if it could be got at any reasonable terms, it would, to all appearance, make an admirable place for our November exhibition. No one spot in London will be central from and to everywhere, but every place is considered central where, from a railway terminus, a cab can drive direct to the place for a shilling or two. The difficulty and dislikes to a building is when a cab is taken and then another transhipment has to be made for a short distance by rail to the destination.

In the early part of this letter I referred to the congratulations I have received. Besides receiving numbers personally, other gentlemen have written from the provinces as follows:—"I must thank you for your clear letter in the *Journal of Horticulture* last week re the National Chrysanthemum Society. For several years I have thought the Committee ought to have run the shows on a good business basis."

Another says:—"The whole question will have to be gone over, and that during the coming season."

Another:—"I have been to shows from the South Coast to the far North of Scotland, and the Aquarium, which has the best produce, is the worst managed and most inartistically arranged of any that I have seen."

Yet another says:—"I greatly admire the bold position you have taken up."

Still another:—"The N.C.S. will do no good wherever its home is under its present management."

I could cite very much more; but the most encouraging congratulation, and the greatest compliment, is the unanimous resolve of the General Committee to ask me to reconsider the resignation I tendered as soon as I raised my pen as a protest against the conditions of affairs under which we are serving. The overwhelming majority of the General Committee

who are thus in favour of my cause, cannot, I think, act otherwise than towards a change of policy, which will have a beneficial effect on the future status of the National Chrysanthemum Society. I thank one and all for their sympathy, congratulations, and good fellowship.

One word more in conclusion. Are we not placing a severe tax on the many horticulturists who are more specially in the florist and decorative line by holding so many exhibitions? What benefit do they gain, say, by the December show? Mr. So-and-So only comes because another Mr. So-and-So will be there representing the special line: and so matters go on, not for these exhibitors' pecuniary benefit, or for the good of the N.C.S., but, as "A. D." puts it, "to exploit a glorified music hall." Is it not intolerable?—J. W. MOORMAN.

I will not weary your readers, nor occupy your valuable space, by reiterating all that has been said on the subject by your previous correspondents: I will merely content myself with saying that I should imagine there are very few members indeed of the N.C.S. who would not be glad to see the exhibitions and Floral Committee meetings held elsewhere than at the Royal Aquarium. The fearful crushing, shouting of rival showmen, the smoky atmosphere, the plethora of drink shops, excessive warmth, and the dreadfully bad light, are obstacles utterly opposed to the display, proper adjudication, or enjoyment of the exhibits.

The question is, Who is to blame for the Society continuing to hold its exhibitions at a place so utterly unsuited for the purpose? Well, I observe that some of your correspondents attribute the blame to the



FIG. 6.—CHRYSANTHEMUM EARLSWOOD BEAUTY.

THE N.C.S.—A FEW SUGGESTIONS FOR FUTURE ACTION.

I HAVE perused the correspondence in reference to the N.C.S. which has lately appeared in your columns with a considerable amount of interest. The discussion so far has been carried on in a perfectly fair and moderate tone, and I feel sure no one can deny that it has not been of a hopeful character. If your numerous correspondents who have taken part in the controversy have not been able to put forward any practicable and tangible scheme for providing new headquarters for the N.C.S.'s exhibitions they have, at any rate, shown that there are good grounds for ventilating the subject with a view to testing the opinions of the members as to the desirability of holding the exhibitions elsewhere than at the Royal Aquarium.

obstinaey and autoeracy of the Secretary: others to the lethargy of the Committee. According to my limited knowledge of societies and their powers, I am inclined to believe that the onus of responsibility rests more particularly upon the shoulders of the members. I hold that the duty of a secretary, be he honorary or paid, is to carry out the instructions of his committee in regard to all important details concerning the policy and general working of a society. It is not his duty to decide where the society shall hold its exhibitions, nor to "rush into print" and express opinions of an authoritative nature concerning the policy of the committee without its sanction.

It is the Committee's duty to formulate and carry out the general policy of the Society, whether it be the preparation of the schedule, the

admission of competitive classes outside the special scope of the Society's objects or within it, or deciding where and when the exhibitions shall be held; and if the Committee fail to discharge the duties devolving upon it to the satisfaction of the Society, the members have the opportunity of passing their judgment upon the matter at the annual meeting, and the power of electing to serve upon the Committee men who are pledged to carry out their duties in accordance with the views of those who elect them.

It is after all only natural that a committee, responsible for the government and finances of a society, should be cautious in undertaking any new departure that would involve pecuniary loss or prestige to it. But if the members exercised their rights of attending the annual meeting, and electing men on the Committee—men pledged to finding a new home for the N.C.S. exhibitions—the new Committee would be strengthened with the assurance that whatever they did in providing new headquarters would meet with the approval of the members; and if any loss occurred, no blame would be attached to them.

By all means then let every member who is opposed to the present policy of the executive attend at the annual meeting in February, and see if it is not possible to take active steps to put a stop to the present régime. It is of no use grumbling at the apathy of the present executive; better by far attend the annual meeting, and by voice and vote decide the question one way or the other.

It is not only in the matter of election of Committee, but also in that of Secretary, Chairman, Vice-Chairman, and other officials that the members should exercise their choice of selection. It is evident from the correspondence in your pages that the present Secretary is not a *persona grata* with a vast number of the members. Well, the latter have their remedy, though it be a drastic one. Let them come forward and elect a capable man, who will give his unqualified consent to carry out the instructions of the Committee; in fact, do what he is authorised to do and no more. Pay him a suitable salary, and let it be understood that he is the servant and not the master of the Committee, and of course has no vote at the board.

One correspondent has suggested that the son of the late Secretary (Mr. W. Holmes) would be a suitable person to fill the post. I beg to differ. With all due respect to this young gentleman, I say that it would be a serious mistake to appoint anyone connected with the trade to the post. Better by far go outside the trade and get an able man accustomed to book-keeping, recording minutes, and conducting correspondence, to fill the post, the same as in the case of the Gardeners' Royal Benevolent Institution. The exhibitions can be managed by a sub-committee, and as to the control of the finances, it would be better to place this in the hands of a competent sub-committee.

As to the Chairman and Vice-Chairman, good and worthy men only should be elected to these posts, men who show no aptitude for airing their own personal views and opinions and "leading the Committee by the nose," but who know the art of conducting the business of the Committee with absolute impartiality. Nothing whatever should be done by Chairman, Vice-Chairman, or Secretary, on behalf of the Society without first consulting the Committee.

There is, undoubtedly, too much of the "one man" element in the management of the N.C.S. at present; in fact this feature has been a predominant one in the management from the period when the Society was inaugurated as a "National" one. No society can hope to prosper for long, or give entire satisfaction, where such an objectionable feature exists.

Get rid of these anomalies, O ye "N.C.S.-ites," by exercising your prerogative rights, and then, and then only, will you achieve the goal of your ambition, see the Society once more on the high road to prosperity, its exhibitions held in a more appropriate place, and its prestige as the premier society of its kind in the world well and worthily upheld.—AN ON-LOOKER.

KINGSTON-ON-THAMES CHRYSANTHEMUM SOCIETY.

THIS once leading Southern Society seems to have fallen on evil days, and is just now beset with a series of troubles. It does not appear to have overcome the blow administered when Mr. George Woodgate left Coombe Warren for his more distant home, and the secretaryship fell into entirely amateur hands. Mr. Woodgate was so well known, had the full confidence of a large body of exhibitors, and the efficient assistance of a first-rate collector, hence in his time the annual exhibitions flourished.

Since then they have been gradually drooping. The present year's account will show a heavy balance to the bad. Then it is understood that the present estimable Secretary, Mr. Douet, is shortly leaving the neighbourhood, and now, not least, the Drill Hall authorities have resolved, after the end of March, to let the Hall no further in order to escape the heavy rates which burden them. For that reason the Chrysanthemum Society will, of necessity, have to seek another home if the shows are to be continued. Of late, too, it has been the practice too frequently to hold the annual show on the same day as the November show of the N.C.S. That has proved to be very detrimental, and unless in the ensuing autumn, wherever held, the show takes place during the week previous—that is, the first week in November—it had better be suspended altogether, which would be, of course, a grave misfortune.

Practically the only other place suitable for an exhibition locally is the fine Assembly Rooms at Surbiton, a far more desirable place undoubtedly, and much more conveniently situate than is the Drill Hall, but these rooms would be more expensive. Doubtless a general meeting of subscribers will soon be called to determine the course of action. It is high time that such course be made known.—A. D.

LADY LAWRENCE SPORT.

I HAVE a primrose sport on Lady Trevor Lawrence. Would someone kindly inform me if this is already in existence? Should this be *new*, I think it, like its parent, will become very popular, as *late varieties* of primrose colour are, I believe, scarce.—A. E.

CHRYSANTHEMUMS FOR INDIA.

I AM desired to send some Chrysanthemums to a gentleman in India. Can any reader of the Journal oblige by informing me—first, What kind of plant would best travel—the old stools shaken out, or young plants raised from cuttings? Second, How should they be packed to insure their arrival in good condition?—T. C.

CHRYSANTHEMUM MADAME CARNOT.

HAVING attended the N.C.S. Show last November, and admired the magnificent blooms of Madame Carnot, I was more than ever disappointed with my own. I grew two plants, and the buds were taken in August. A long bloom stem and a large bud on the top. Just under the bud smaller buds formed, as many as fourteen, hen and chickens fashion. I have spoken to several gardeners about it, and as many as nine told me that their plants came the same as mine, and they did not get a bloom at all, but the buds dwindled away. My object in writing this note is to ask if some of the practical readers of the *Journal of Horticulture* can tell me how this variety should be treated to avoid failure. Although I am not an exhibitor I like to have something good to invite my friends to see. It is very hard to labour at anything for nine months in the year in one's leisure time and get nothing in return. I feel certain that if we can be told how to successfully flower this fine variety many growers who have tried and failed will be thankful.—LOVER OF FLOWERS.

THE "BEST" VARIETIES.—WHO'S TO DECIDE?

"PLEASE send catalogue and mark the best twenty-four Japs" is a request I, and no doubt other trade growers, often receive. In a contemporary Mr. W. H. Lees gives a list of the best fifty, and a selection of twenty-four is again made from this number. Mr. Wells, on page 624, December 30th, of the *Journal*, favours us with his selection of the best sixty, from which again selections of the first twelve and twenty-four, and so on are made. To say which is the very best twelve or twenty-four is a task I have no wish to undertake, for some varieties do well one season and almost fail the next, while situation and method of culture, even among experts, have much to do with success or failure.

In the first twenty-four as given by both these experienced growers, we find Madame Carnot, Yellow Madame Carnot, Mrs. J. Lewis, Mutual Friend, Simplicity, Mrs. H. Weeks, Phœbus, Chas. Davis, Vivian Morel, Edith Tabor, Edwin Molyneux, Mons. Chenon de Leché; with this choice we all agree, except that some would perhaps prefer a little more colour; still, as twelve varieties, they are unequalled.

In the remainder of Mr. Lees' selection are Dorothy Seward, Miss Dorothy Shea, James Bidencope, Mrs. W. H. Lees, Modesto, Lady Byron, Col. Smith, Eva Knowles, Elsie Teichmann, Western King, Oceana, and Lady Ridgway. The first four of these last twelve Mr. Wells does not even place among his selection of sixty, which must be an oversight. Mrs. W. H. Lees is generally of a poor colour and form, but has size, and in spite of all that is written and said, size is the first consideration with most judges, and this variety is very frequently found in winning stands. Mr. Wells also places Miss Elsie Teichmann at the bottom of his list of sixty, which calls for comment, as most growers consider it one of the best yet introduced, while to omit Oceana, Lady Ridgway, and Modesto from the first twenty-four most persons will consider a mistake.

Those given by Mr. Wells, and omitted by Mr. Lees, are Georgina Pitcher, Julia Scaramanga, Australian Gold, Pride of Madford, Australia, Thos. Wilkins, Mons. Hoste, Mdle. Laurence Zédé, Lady Hanham, Madame G. Bruant, Madame Louis Remy, and Mons. Panckoucke. The first named, after a two-years trial with me, is undoubtedly good. The last but one is a white sport from Mrs. C. H. Payne, and is also being sent out as Lady Ellen Clarke, and may be considered a novelty.

Varieties that I should place among the first twenty-four are Sunstone, Mrs. Maling Grant, Master H. Tucker, Werther, Mrs. F. A. Bevan, and Ella Curtis, the first four of which are excluded from Mr. Wells' collection of sixty, whilst such varieties as International, Mrs. C. H. Payne, Madame M. Ricoud, and Amiral Avellan find a place therein. Strange to relate, Etoile de Lyon is missing both from Mr. Lees' fifty and Mr. Wells' sixty, and yet very few prize stands are without it.

In addition to those mentioned above, and not quoted by Mr. Wells, I prefer the following to many to be found in the list of sixty—Dr. Ziebert, Joseph Brooks, Geo. Seward, A. H. Wood, John Seward, V. Roger de Chezelles (tall, I admit, as are others recommended), Mrs. J. J. Glennen, Mrs. Chas. Keyser, Wilfred H. Godfrey, John Neville, Duke of Wellington, Madame J. Bernard; but stay! the "best sixty" is a much longer list than I thought, and to give a list of either the best twenty-four, thirty-six, or even sixty, is a task I will not set myself.

In conclusion, I would like to recommend Topaze Orientale as a true incurved. Mr. Molyneux omits this from his list on page 624. Of course he may not have grown or seen this, and he wisely mentions only those which come within this category. The variety is of easy culture, requires little dressing, is of fine form, delicate colour, and large in size. I am doubtful as to whether Madame Edmond Roger should be placed in this class any more than Louise, Robert Owen, and others now shown as Japs. Still another season will definitely settle this matter.—W. J. GODFREY, Exmouth.

SLUGS EATING WORMS.

THE enclosed very rough sketch, which I made in the kitchen garden, represents three slugs, "*Testacella Mangei*," eating a worm. You will observe one at each end of the worm, and the other tugging away at the middle of the unfortunate creature.

Whether these slugs do good or harm by destroying worms, I am content to leave to those who are competent to decide. They do not, however, confine themselves to worms, for I have frequently noticed them eating the mischievous black slug, and for this reason I never kill one of them, or allow the men to do so.

I do not know whether this is a common species. It abounds in our garden, and I believe it is responsible, to a large extent, for the small amount of harm done by slugs here.

I thought the above might possibly interest you. I notice various questions have from time to time been asked respecting this slug. I am not quite sure as to name I have given being correct, or of its correct spelling. I think, however, it is *Testacella*, but doubtful of *Mangei*. I have some recollection of the name of the above insect being in dispute some years ago.—THOMAS ARNOLD.

P.S.—I ought to say that I have never seen this slug eating vegetation of any kind, and believe it lives entirely on other insects. Is this so?

[The slug, *Testacella Mangei*, a native of South-west Europe, appears to have naturalised itself in some parts of this country. It is dark brown in colour, and the shell, at the extremity of the body, is larger than in the British species, *T. haliotidea*. This species occurs in many localities in the South of England, and has been found in Scotland. It is a dirty yellow, with brown specks, sometimes, but rarely, pale yellow, and even more rarely entirely black. The ear-shaped shell on the rear of the mollusc, and protecting it when in the burrow after worms, is about a quarter of an inch long, and the full-grown animal, when extended, about 3 inches in length. The carnivorous slugs do no harm, as whatever good worms effect in Nature they may be too abundant in cultivated land, especially the rich soil of gardens.]

CINERARIAS IN MIDWINTER.

CINERARIAS grown as annuals are extremely useful plants, and accommodating too. Although the regular flowering season is considered to be during the months of March and April, a good display may, with a little management, be obtained at midwinter and for a month before Christmas if desired, so amenable are the plants to different forms of treatment. A good number of plants flowering at the time named gives a pleasing variety after the bulk of the Chrysanthemums are past, the same plants lasting in good condition for a considerable time.

Apart from their usefulness as decorative plants, Cinerarias in a cut state are appreciated, the bright and varied colours appear so well under artificial light. No annual that I am acquainted with gives so much range in colouring as Cinerarias.

An advantage gained in flowering these plants at this time of the year is they are not nearly so liable to be infested with green fly as they are when flowering more at the ordinary season, when the weather is warmer. Where convenience exists, there is no reason why the plants should be in flower at one time. Whether it be during the middle of winter or in spring, a succession can easily be secured, provided space is available for a greater number of plants. The point to study is to sow the seed at intervals, instead of making but one sowing, as in the ordinary method of allowing the plants to flower as they will, say in March and April.

Some cultivators still adopt the old method of raising their stock of plants from offsets annually. Where special kinds or colours are desired no other method is so certain of success; but, nowadays, when such a wide range of colours as well as quality in the individual blooms can be obtained from seed through a reliable firm, it seems to me to be a waste of time to resort to the offset method. For flowering at Christmas, those raised from seed are better. Two sowings should be made—the first during the early part of May, and the second the first week in June. A succession of flowering plants is then assured, assuming, of course, neglect does not follow the initial stage. Any fine sandy, sweet soil will suffice to sow the seed in. Well drained pans are the best for the purpose, covering the pan with a square of glass. To maintain the soil in a moist state, a little moss over the glass will dispense with the necessity of shading the frame.

Directly the seedlings show through the soil remove the moss and tilt the glass a little to admit air to keep the plants sturdy. A weakly growth cannot produce dwarf plants with robust foliage and strong heads of bloom, such as are required to be effective in a decorative point of view, especially for house use. Plants ranging from 9 inches to double that size in height are best suited for decorative use at the time named. This is a point to be borne in mind.

The pots in which the plants are to flower should range from 4½ inches to 7 inches in diameter. These final sizes will guide the cultivator in giving the plants their preceding shifts. A compost largely consisting of leaves thoroughly decayed, with a small portion of loam and sand mixed with it, will be suitable in the initial stage; afterwards more loam should be added in the place of the leaves, with a small quantity of partly decayed horse droppings for the final shift. It is a mistake to allow the roots of Cinerarias to become matted together before they are repotted; the foliage becomes crippled, and the flower spikes are never so stiff as they ought to be.

Cinerarias must have abundance of water during active growth, and require frequent supplies of liquid manure, especially when the pots are small. Nothing is better than that made from cowdung and soot given in a weak state. Sulphate of ammonia at the rate of a quarter of an ounce to a gallon of water is beneficial after the flowering pots are well filled with roots. It imparts a deep green colour to the leaves, but it should not be given oftener than once a fortnight.

The first sowing may be made in a spent hotbed, the second in a cold frame behind a north wall. This latter affords the best site for all the plants for the first four months of their growth (including those sown in the hotbed after their first potting), as the trouble of shading the frames daily can be dispensed with, which will be a great saving of labour. Frames or pits with a southern aspect during the month of October will suit the plants better than their previous position, rendering them more compact in growth than they would be if remaining behind the wall longer. About the first week in November take them inside to a light airy position, as near the glass as possible. In our case we erect a temporary stage with boards across the border in the Peach house, which is kept as cool as possible; by that time the leaves have fallen from the Peach trees, the Cinerarias then obtaining plenty of light.

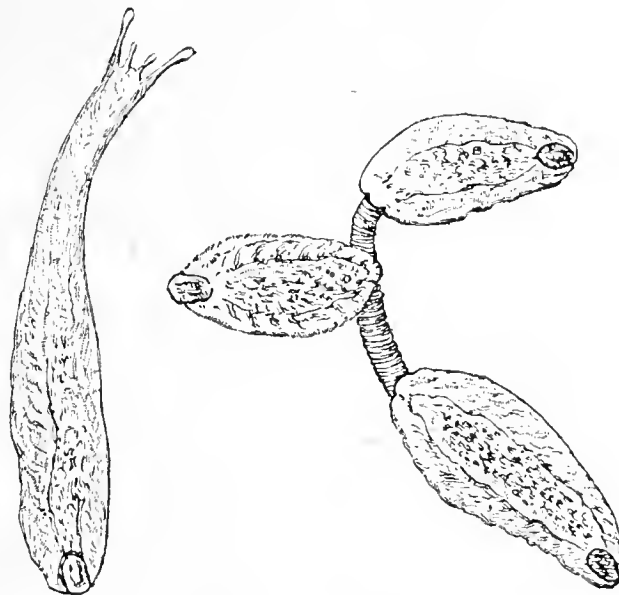


FIG. 7.—THE WORM-EATING SLUG.

There they remain until the flowering season is past. At no time of their existence must the plants be crowded, or they will certainly be spoilt. The leaves of one should only just touch those of its neighbour. Cinerarias suffer perhaps more than any kind of plant by overcrowding.

The plants are very subject to attacks of green fly, thrips, and the leaf-mining maggot. Frequent fumigations with tobacco will dispose of the two former pests when the first signs of the enemy are noted. For the latter hand-picking must be resorted to. The maggot can be seen in the leaves, and is easily removed with the point of a knife. Until the plants come into flower they are much benefited by syringings of clear water in the evening after a warm day.—E.

KITCHEN GARDEN NOTES.

WHETHER much work or little can be accomplished in the kitchen garden during January depends largely on the weather. On all favourable occasions it is desirable to proceed with digging, trenching, or bastard trenching. The best time for this work is cold, dry weather, or when the ground is clean and crisp with a slight frost. The worst time to tread upon or disturb soil is immediately after the breaking up of a hard frost or close upon the heels of heavy rain. More harm than good is done by working the ground when soil sticks to the boots and the tools.

Outdoor winter work requires careful planning beforehand. In the driest or frosty weather the heavy work of wheeling manure should be carried on so that the least damage is done to walks and edging. When the ground is too wet or sticky for profitably working pay attention to the rubbish heaps, stack leaves into compact heaps, turn and mix manure, separating from the heaps of decaying material anything that will not readily decompose, such as sticks, vegetable or herbaceous stems, hedge clippings, and prunings of all kinds. Make a fire with these and convert them slowly to ashes and charcoal by a process of subdued combustion. When the fire is well started pile on the whole of the combustible material and cover with weeds, wet leaves, or anything short and damp, which will tend to prevent rapid burning by shutting out the air.

This method of disposing of all useless waste which does not readily ferment is termed a "smother." The smother may be kept going for some time by closing up any apertures with damp material where the fire may break through. The result in the end will be a valuable heap of wood ashes and charcoal available for use in the preparation of seed beds and drills, and to fork in the surface soil before planting out Cabbage, Lettuce, Onions, Strawberries, and other crops.

The preparation of the manure for hotbeds is a matter which may also be attended to when the weather is unsuitable for other work. Stable litter and leaves are the best materials for forming hotbeds at this

early season. Strong and rapid, but a soon exhausted heat is not required. Horse manure ferments very rapidly, leaves less so, especially those of hard texture like Oak and Beech leaves. These are the best to obtain and mix with manure in equal parts for early hotbeds covered with or placed in frames. The surface of the bed then covered with about 9 inches of soil, early crops of Radishes, Lettuce, Horn Carrots, and kidney Potatoes may be secured.

Some gardens possess a favourably situated border facing south, and protected with a wall, which not only prevents winds and storms sweeping along to some extent, but radiates heat from its face. Should the soil also be light, fertile, and well drained, as it usually is on such aspects, the ground ought, on the first favourable opportunity, to be prepared for sowing early crops of Peas, Beans, Spinach, Lettuces, and Radishes, and the planting of early kidney or round Potatoes.

Hoeing between any growing crop, such as Cabbage, Winter Spinach, or autumn-sown Onions, whenever the soil becomes dry enough on the surface, will promote nitrification and consequently encourage growth.—E. D. S.

NOTES ON FIGS.

In establishments where Figs are grown and highly appreciated, it behoves those in charge of the trees to give them close attention from the present time and onwards. We have a comparatively large collection, and have to maintain a supply over as long a period as possible, and it has occurred to me that a few notes on seasonable points will be acceptable to many readers.

EARLIEST FORCED TREES IN POTS.

The terminal buds having started, advantage should be taken of the mild weather that may prevail to increase the temperature of the house, as when Figs are fairly started into growth they delight in a good heat, plenty of moisture, and all the light that can possibly be given to them; the glass therefore must be kept clean and air admitted, so as to prevent it being constantly covered with moisture. Maintain a night temperature of 55° to 60°, ventilate a little at 70°, losing no opportunity of admitting a little air when the morning promises an increase from gleams of sun, and close sufficiently early for the temperature to rise to 80° or more.

Syringe the trees and walls twice a day on fine days, but when the weather is dull and wet omit the afternoon syringing, and damp the floors in the evening instead, as the trees are weakened and the foliage made soft by keeping them wet during the night. Be careful not to allow the heat about the pots to exceed 70° to 75°, and if the materials are heating too violently turn them as a means of reducing the bottom heat, but it ought to be kept steady. Trees started now, and with bottom heat, will give fruit in May. The varieties we find best for pots are small-fruited—Early Violet and St. John's; large-fruited—Pingo de Mel and Brown Turkey.

EARLY HOUSE OF PLANTED-OUT TREES.

The best all-round Fig is Brown Turkey, as it gives good results both in the first and second crops, the former ripening early in June, and the latter in August and September. Maintain a night temperature of 50°, 55° by day, and 60° to 65° from sun heat. Trees that have been started about the same time for a number of years push growths with little excitement; but young ones that have not been forced start tardily, and are often given more heat in the early stages than is good for the crop. This should be avoided by bringing the trees on slowly, seeking advancement by sun heat more than artificial in dull weather. Apply water to the border not colder than the mean of the house, bringing the soil into a thoroughly moist condition. Syringe twice a day with tepid water, a little warmer than the house; but in dull weather damp the paths, walls, &c., only, syringing always sufficiently early to allow the trees to become dry or nearly so before dusk.

SUCCESSION HOUSES.

Proceed with pruning as convenient, thinning the wood where crowded, cutting back that which has reached the extremity of the trellis to growths well disposed for supplanting the branches cut away in bearing. Thoroughly cleanse the house, and limewash the walls. Wash the trees with warm soapy water, using a brush, and the trees having been infested with scale or red spider use a softsoap solution, 4 ozs. to a gallon of water, and a wineglassful of petroleum. The softsoap must be dissolved by boiling in a quart of the water, the petroleum added whilst boiling hot, but the vessel removed from the fire, switching well to form an emulsion, and then dilute to 1 gallon, or add the 3 quarts of water remaining hot, and use at 130° to 140°. It is necessary to dislodge the scale, effecting that by using a half-worn painter's sash tool, thoroughly cleansed from paint. Remove the loose surface soil or mulching, and supply fresh lumpy loam with a sprinkling of steamed bonemeal, three parts; sulphate of potash, two parts; and ground coprolites, one part, mixed, a good handful per square yard, and scratch in with a fork. Keep the house as cool and dry as possible, merely excluding frost, or not allowing the temperature to fall many degrees below freezing point.

YOUNG TREES IN POTS.

Where these are wanted for early work another season they should be placed in gentle heat during this month, in order that they may make and properly ripen their growths by September. They must be potted without delay, using good rather strong turfy loam, with a fourth of old mortar rubbish, and a fifth of thoroughly decomposed cow

manure, draining efficiently, and potting firmly. Train them with a single stem, and allow the branches to radiate so as to form a good bush or pyramid. Insert cuttings or eyes of any varieties it may be desirable to increase, and in order to make a good growth they should be encouraged with bottom heat, and started not later than the beginning of February.—GROWER.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—JANUARY 11TH.

THE exhibition on the above date was the first of the year 1898, and was, all things considered, a capital one. The exhibits were not very numerous, but were of conspicuously good quality, and fairly well diversified. Cyclamens and Primulas made very pleasing displays, and were somewhat largely shown. Orchids with fruit and vegetables were not very numerous.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with Messrs. G. Bunyard, J. Cheal, A. F. Barron, T. J. Saltmarsh, A. Dean, W. Bates, W. Farr, C. Herrin, W. J. Empson, G. Wythes, H. Balderson, F. Q. Lane, G. Norman, J. Willard, R. Fife, and J. H. Veitch.

Mr. W. J. Empson, gardener to Mrs. Wingfield, Amptill House, Amptill, staged a collection of thirty dishes of Apples, for which a silver Knightian medal was awarded. The varieties were well coloured, and all the fruits were in an excellent state. Mr. J. Bury, Petersham Vineries, Byfleet, sent a splendid collection of Grapes as grown and packed for market. The bunches were in cross-handled baskets, and could not take harm in travelling. A silver Knightian medal was awarded. Mr. J. Miller, Ruxley Lodge, sent a box of fine Mushrooms, and Messrs. Rivers & Son, Grape Directeur Tisserand and some Citrons.

Prizes for Flavour.—The first prize for a dish of Pears went to Josephine de Malines, staged by Mr. C. Ross of Welford Park. The first for Apples was taken by Mr. J. Tallack for Margil, and the second to Claygate Pearmain from Col. Brymer.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. J. Laing, H. B. May, R. Dean, C. T. Druery, J. H. Fitt, J. F. McLeod, J. Hudson, J. T. Bennett Poë, J. Walker, J. D. Pawle, C. E. Pearson, C. E. Shea, G. Gordon, E. Beckett, C. Blick, H. Turner, G. Paul, and J. Fraser.

Cyclamens and Primulas made a very rich display in the Drill Hall, and were contributed by several different firms who make a speciality of this most useful of winter flowers. Messrs. H. Low & Co., Upper Clapton, sent a number of Cyclamens of the grandiflorum section. The plants were in 6-inch pots, and were producing flowers of good size and varied colours. From the same firm also came plants of Carnation Winter Scarlet, of which the flowers were very bright in colour, and of good form (silver Banksian medal). Mr. J. R. Box, Croydon, exhibited a handsome stand of Primula sinensis, comprised of plants that had been splendidly grown. Amongst the varieties noticed were Princess Mary, Surprise, Wickham Beauty, Firefly, Queen, Rosamund, Wickham White, White Perfection, Emperor, Cannell's Pink, Marquis of Lorne, Margaret, and Mrs. Pereira (silver Flora medal).

The whole of one side of a long table was occupied by plants of the celebrated Swanley strain of Chinese Primulas. The plants were small but very healthy, and the flowers they were carrying particularly rich in colour. Many of the several varieties staged represented forms raised by Messrs. H. Cannell & Sons, and a few of the most conspicuous were Eynsford Red, Cannell's Pink, Distinction, Emperor Improved, Eynsford White, Swanley Blue, White Perfection, Kentish Purple, Victory, My Favourite, and Pink Queen of the singles, with Feronia, Earl Beaconsfield, Annie Hillier, King of Purples, Mrs. R. Crabbe, and Marchioness of Exeter of the doubles (silver Flora medal).

The large exhibit of Cyclamens from Messrs. Sutton & Sons, Reading, was one of the most charming in the show. Every one of the plants staged bore the impress of fine quality and the best of cultivation. It would have been a matter of impossibility to find a really bad plant, and no better criterion of the excellence of the Reading strains than this collection. The plants, all in small pots, were carrying beautifully marbled foliage, and flowers of singular purity of colours in the utmost profusion. There were pure white, rose, salmon pink, purple, crimson, and several other colours, representing such varieties as Salmon Queen (silver Flora medal).

Messrs. J. Veitch & Sons, Ltd., Chelsea, staged baskets of Hamamelis arborea, H. japonica Zuccariniana, and Garrya elliptica, with a box of flowers of hybrid Rhododendrons of charming colours. The only exhibit of miscellaneous flowering and foliage plants was contributed by Messrs. J. Laing & Sons, Forest Hill. There were Crotons, Palms, Dracenas, Begonia Gloire de Lorraine, Cyclamens, Nepenthes, Poinsettias, and others (silver Flora medal). Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, sent pans of Narcissus monophyllus, composed of well-flowered plants.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, de B. Crawshaw, H. Ballantine, W. H. Young, H. Little, H. J. Chapman, T. Statter, T. W. Bond, E. Hill, J. Douglas, and S. Courtauld.

Orchids were very sparsely shown; in fact, there were only two exhibits of any size, and even these were not very large. Messrs. F. Sander & Co., St. Albans, showed a number of plants, conspicuous amongst which were Lælia anceps Sanderiana, L. a. Hilli, L. a. Dawsoni,

Dendrobium Johnsoniæ, D. Dulce, Oakwood variety, *Lycaste Skinneri*, with a few *Cypripediums*. Messrs. H. Low & Co., Clapton, sent a small group, of which *Odontoglossum Andersonianum*, *O. crispum*, *O. c. Tackianum*, *Cypripediums Clotho*, *Bellona*, F. S. Roberts, and *Lathamianum* were the best. Mr. A. Chapman, gardener to Captain Holford, Tetbury, sent a group of cut Orchids, amongst which were several of good quality, and received a silver Banksian medal.

AWARDS OF MERIT.

Cattleya Trianæ Sanderæ (F. Sander & Co.).—A very pleasing form of the type. The sepals and petals are very delicate blush, the latter being broad and slightly fimbriated. The shapely lip is rich crimson, with a suffusion of purple and a yellow throat (award of merit).

Cypripedium F. S. Roberts (H. Low & Co.).—This is a very charming form. The ground colour is white over the whole, the spots being claret in colour and very numerous. The pouch has a patch of this shade (award of merit).

Lælia anceps Amesiana Crawshay's variety (de Barri Crawshay).—This is a lovely form. The broad petals, almost white at the base, deepen in colour until at the tip they are bright red. The colour of the lip, which is rather small, is peculiarly deep velvety crimson (award of merit).

LONICERA SEMPERVIRENS.

IN supposing this plant to be quite new M. J. Davis is in error, for it has long been known and grown for twining up the rafters of a cool greenhouse. For this purpose few plants are better suited than this lovely North American Honeysuckle. The terminal clusters of trumpet-shaped flowers (fig. 8), which are produced during spring and early summer, hang down in great profusion, and are very showy, being brilliant orange-scarlet with yellow inside the flowers, and contrast well with the glaucous green leaves. If planted out of doors in a warm and sunny situation it flowers freely during the summer, but, unlike most of our hardy Honeysuckles, it has no scent. There is another variety of this delightful species called *L. sempervirens minor*, which is also useful for a similar purpose.

NOTES ON PRIMULAS.

THERE are few small indoor flowering plants so generally useful as the Chinese Primrose. It has been in this country now some fifty years, but it is within the last twelve or fifteen years that the greatest advance has been made in raising improved varieties. The double sorts are very valuable, especially for cutting, as they last much longer than the single varieties. For bouquets they are also most useful. As decorative plants, however, the single varieties are in the greatest demand, and are the most serviceable. The Primula is easy to grow, provided it receives fair treatment and its requirements are studied. A light position is all-important. In the winter the plants cannot be too near the glass, and at that season they require a little more heat than an ordinary greenhouse, otherwise, as most growers can testify, they are liable to damp off at the collar.

The usual method is to raise fresh plants every year, destroying the old plants as soon as they have flowered or have ripened seed, except in the case of any that may appear to possess some superior quality. To have them strong for flowering towards the close of the year, the first sowing should be made at the beginning of March. Well-matured plants that have not been pushed on too quickly are not so likely to damp off as those which have been hurried. The seeds of Primulas require care in sowing, or they will not germinate. In all stages Primulas cannot endure any approach to stagnation in the soil, consequently the pans must be well drained, placing a layer of dry manure over the crocks. The soil should consist of three parts good loam sifted, and two parts sand and decayed leaf soil in equal proportions (the latter sifted). The whole being well mixed together, fill the pans with this compost to within an inch of the rim, and press it down moderately firm. Sprinkle a little sand and press the surface smooth, next give a gentle watering to settle the soil; then sow the seeds evenly, and scatter some very fine compost half soil and half sand over them to the depth of about the eighth of an inch; again smooth the surface by gentle pressing, then cover with brown paper, which will keep it damp, so as to obviate the necessity for giving water until the plants appear. Care must be taken that the paper does not remain on longer, or it would cause them to become drawn. After they have advanced a little place them in a light situation, shade them with any light material which will protect them from scorching without darkening them too much. Give a little water as they require it, and when large enough prick them out $1\frac{1}{2}$ inch apart in pans of soil similar to that in which the seed was sown.

When they have leaves nearly an inch in length they must be placed singly in 60-size pots, employing the compost before mentioned. After potting, the best place for them will be a shelf in a light house or pit in an open situation. Place the plants close to the glass. This is of importance, as if in the bottom of a pit or house and near together their leaves become drawn, and the plants not only have a weak appearance, but also will not produce half the quantity of flowers they will do if strong and vigorous. When the weather is very bright they should be

slightly shaded, ventilating freely during the day, and at night when mild. As soon as they have filled their pots with roots they may be transferred to 6 or 7-inch pots, which, for all ordinary purposes, are large enough to grow and flower them in. The soil this time must consist of three parts good loam broken with the hand, one part of leaf soil; add a little bone dust, and as much sand as will keep the whole porous. Pot firmly, and leave sufficient room for watering. The best position for them until September is houses or pits as already advised, up to which time the flowers they from time to time produce should be removed, unless early blooming is required. To keep the atmosphere free from damp employ fire heat occasionally, and if a little warmth is kept on so as to have the night temperature at 45° the flowers will be much larger,

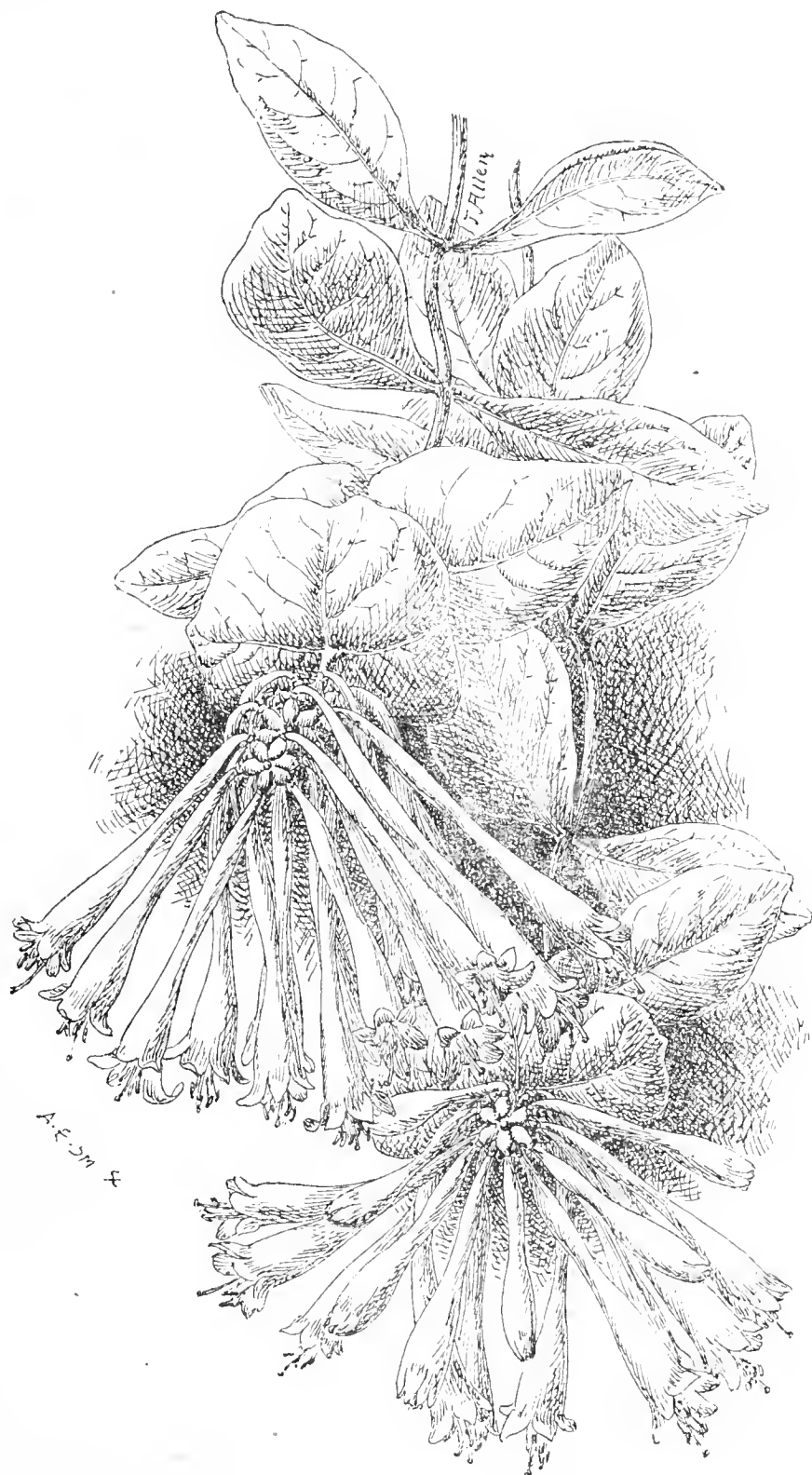


FIG. 8.—LONICERA SEMPERVIRENS.

and produced through the winter in greater quantities. As the flowers are being produced give liquid manure freely, as it will be of great assistance to them.

The double and semi-double forms of this flower are increased from seeds sown and managed as described in the case of the single varieties, also by cuttings made by a division of the crowns with a portion of stem attached. These root best in small pots in sandy soil in a moderate heat. They must not be in a very humid atmosphere—only sufficient to keep them from flagging, or they are liable to damp. When they are well rooted transfer them to 4-inch pots, employing soil similar in every way to that advised for the single kinds. Pot them low, so as not to leave any of their stem bare. So treated they will thrive much better than with the common practice of leaving a considerable space between the soil and the bottom leaves. Through the summer let their treatment be the same as that of the single sorts, but in the winter they do far the best when kept in an intermediate temperature of 45° or 50° at night, and a little higher in the daytime, with ventilation when the weather is suitable.—M. T.

THE MANURIAL VALUE OF SOLUBLE PHENYLE.

IN reply to Mr. Abbey's bold challenge, I offer the following facts in support of my statements:—

1, *Composition of "Soluble Phenyle."*—On consulting your columns a few weeks back, I came upon a "tit-bit," which is duly installed in my album of chemical curiosities. A meek inquirer was bantered for confounding "phenol (C_6H_5O)" with "soluble phenyle, which was C_6H_5 ." I challenge Mr. Abbey to explain the manurial value of C_6H_5 , and further offer him a copy of a recent text-book on organic chemistry if he can provide me with such a substance as C_6H_5 . Although apparently a homely and familiar article to your respected contributor, it seems to be quite an unknown monstrosity to chemists. The only excuse I can give for stating the composition of "soluble phenyle" in the form I did is that it presented the inventor's own statement of composition as set forth in his patent specification. How about C_6H_5 now?

2, *Potash in "Soluble Phenyle."*—The sole source of potash in the scheduled mixture is the softsoap. The 1 per cent. of potash is due to this material alone. As an agricultural chemist I should assess the manurial value of "soluble phenyle" at 4s. per ton at current prices for potash.

3, *The Nitrogen in Soluble Phenyle.*—"Creosote" I do not know, but if creosote be meant, then I state that the nitrogen in creosote is not in the form of salts of ammonia, or of any substances which yield ammonia or nitrates in the soil. I have just tested a sample in my laboratory. The nitrogenous substances are stable basic bodies such as pyridin— C_5H_5N —and are extremely poisonous not only to plants, but to bacteria and other soil organisms. Soda is quite without effect on these bodies. No ammonia is evolved on boiling creosote with strong caustic soda solution. I have known Hops killed through contact of the roots with a recently dipped pole.

4, *The German Government* has been spending £20,000 a year in attempting to cure the eelworm disease of the Sugar Beet. They would doubtless be grateful to Mr. Abbey for suggestions and information.

5, *Kainit.*—This is known to be highly injurious to many plants, especially when grown in restricted soil, and gardeners should not be surprised to find the kainit sometimes worse than the disease.

6, *A Practical Proposal.*—Quite apart from the eelworm, we have most divergent statements recorded as to the manurial effects of "soluble phenyle." Why let the matter rest? I propose that several of your readers who are interested in the matter should conduct the following test in combination:—

Select six healthy Cyclamens or other pot plants and set them aside for experimental (and, perhaps, sacrificial) purposes, and treat as follows:—Plant 1, normal treatment with water only; plant 2, watered freely with Little's soluble phenyle, 1 oz. in 1 gallon of water; plant 3, do., 1 oz. in $1\frac{1}{2}$ gallon; plant 4, do., 1 oz. in 6 gallons; plant 5, watered with kainit, 1 oz. in 1 gallon of water; plant 6, do., 12 ozs. per gallon. The results should be duly reported in this Journal.—HALOGEN.

[We believe Mr. Iggulden's settled practice with phenyle, as recorded on page 16, was based on careful experiments. He is not the man to act recklessly, and thus risk injury to his plants and crops. At the same time, the experiments suggested are well worth trying. If Mr. Abbey accepts the challenge which he has invited he will do so the more effectively by doing it as briefly as possible, or by acting on his own advice to "let the answer be clear," and supported, if not by practice, by chemical authorities. We want no more bantering by either one side or the other.]

LILIUM SPECIOSUM.

It is not very generally known that the period at which *Lilium speciosum* may be had in bloom can be very greatly lengthened, and this simply by the time at which different bulbs are started, the first quantity being by a very gentle system of forcing hastened into flower about the middle of July.

Where fine specimens are wanted choose 12-inch pots, giving them efficient drainage. For soil use an admixture of good turfy yellow loam partially decomposed. I prefer that in which abundance of white sandy grit is found. This should be chopped up into moderate-sized lumps, to be afterwards sifted to remove all the more dusty portions of the soil. The more turfy portions only ought to be used. With this mix a few lumps of charcoal, some well-decomposed leaf mould, adding a dash of silver sand. Fill the pots to within 3 inches of the top with these well mixed together, making the whole tolerably firm. Into this firmly press the bulbs, taking care not to bruise or otherwise injure the scales. Let the tips of the upper scales upon the bulb appear through the soil, placing the same firmly around them. This is very essential to all fresh-planted bulbs. The number I generally place in a pot of the above size is from seven to nine. It depends whether any of them are likely to produce two stems upon the single bulb.

Any who may not wish to have large specimen pots, or may prefer to have them of a more portable size, cannot do better than choose 7-inch pots, in which four or five bulbs may be placed in a similar manner. These smaller pots will not need half the care and attention that the larger ones do, as the same caution as to watering need not be observed. The large mass at this early season of the year getting so easily overlaid with moisture, will cause the soil, being without roots, to sour if great care is not observed.

Place the pots in a situation where they will receive a moderate amount

of light and heat; the temperature not to be below that generally kept up in a greenhouse. As I have before observed, care should be taken, especially at this early season, in watering them. They will require none until the plants have made a start, when a thorough soaking of tepid water will greatly benefit them. They should now be removed into a temperature of at least 55, with light and air. When they have made a growth of 6 or 7 inches they can be removed to the more airy end of the greenhouse, or to a pit, from which the frost is excluded.

At the base of that portion of the growth which may be above the soil, a quantity of strong healthy roots may be observed; firmly cover these with some pieces of turfy loam and leaf mould, sufficient to fill up the pot to within the customary distance from the rim. With occasional sprinklings, and as they advance in growth more liberal root-waterings, they may, taking care to tie them when necessary, remain in this situation until the period of their flowering, which from a January potting should be about the middle of July at the latest.

The next set may be potted about the middle, or at the end, of February. These should be treated precisely like the former, save that they will require no heat, but should be placed in any sheltered position until they show signs of growth, when they should be removed into a light, airy situation, where the frost cannot reach them, there to remain until they require staking, and are showing for flower, which will be about the end of August.

The next in succession are to be grown entirely in the open ground, where they will flower readily with the following simple treatment. Pick carefully out of the old soil every bulb. I dibble these out in the ground where they are to stand, four or five in a patch, taking care to place them some 5 or 6 inches deep. I find a bed very suitable for them which is composed of an admixture of heavy sandy loam and peat. These small bulbs, some of them scarcely more than a scale in size, perfect a growth sufficient in one season to flower in the following one, and thus I have annually in that spot a goodly bunch of these blooming more or less efficiently according to the season, and giving a succession of flowers from July until the frosts of autumn visit us.

These Lilies have the additional merit of being good flowers for travelling long distances without losing either beauty or fragrance. They should be taken off the main stalk with a reasonable quantity of the flower stalk, at from two to four days before the period at which they would naturally expand, and if desired to be sent any distance before expanding, they only require to be placed where they will not become crushed, wrapped up in paper.—E.

NOTES ON PEARS.

THE contributions on this important fruit are most instructive. Cannot we be favoured with more notes from practical men on this and kindred subjects? They would, I think, meet with general acceptance by gardeners.

"W. S." (page 621) has not much faith in Glou Morceau Pear this year. With me it is very indifferent in flavour, though in other years it has been much more juicy and agreeable. I fancy it requires a warmer room to develop its flavour. Bergamotte Espere is now ripe with me, but is only of very moderate flavour. The tree is a prodigious bearer, and is on a wall in a south-west corner. Jean de Witte, a little known variety, a medium sized russety Pear, something after Winter Nelis, is just over. The tree is an espalier, and for the first time in four years has been in good condition.

Madame Millet, a Pear of good appearance, not unlike the foregoing, is still hard, and refuses to approach ripeness; it stews very well, and that process appears to be its destiny. The same may be said of Bcurré Rance, which I see is mentioned in Mr. Bunyard's catalogue as "one of the best late Pears." I have never yet had the pleasure of tasting a fruit in perfection, and should be glad to know how to get it into that state of ripeness, which hitherto I have failed to do.

Easter Beurré is not what I can call a pleasantly flavoured Pear; it is always more or less gritty, and with me scabby. When good and clean the fruit is handsome, and tells on a dinner table, but in appearance only. I know, with "W. S.," of no really good Pears after Winter Nelis is over. It would be a boon if some horticulturist could improve the size and at the same time retain the flavour of this excellent Pear.

Coming to an earlier season, Beurré Superfin vies with Marie Louise as hard to beat; though not so sweet as the last named, it is most refreshing and juicy, and a good bearer. I have it on a west wall. Were I to be asked to name the Pear *par excellence*, I should be inclined to choose Doyenné du Comice. I have several trees on an east wall, and although the variety is not a consistent cropper with me, the fruit is of extra size, beautifully coloured, and of superb quality. Well may one urge those not possessing this variety to lose no time in finding room for one or two trees without delay.

Tomtits are not slow in recognising the most toothsome varieties, and they play sad havoc with this Pear. Is there no more approved way of dealing with these destructive little creatures than by putting slit cardboard over each fruit (a tedious business), or netting the trees? I am afraid the planting of Sunflowers near the Pear wall has but little effect, and does not seem to act as a deterrent against the birds taking just one peck at the base of the fruit, which eventually means decay at that point.

Referring to fickle varieties, I may mention Hacon's Incomparable, Ne Plus Meuris, and Beurré Bosc. Not one of these is satisfactory in ripening the fruit. The first and last named are on a west wall, open to the north. Perhaps this position is too cold for them. Ne Plus Meuris is on espaliers, and is always very loth to ripen. Maréchal de Cour and Van

Mons Léon le Clerc are sure bearers. The former is the better flavoured, and both are good doers. Dr. Trouseau has a peculiar flavour, and is only appreciated by a few, but is, nevertheless, a fine November Pear of extra size.

Where one has to supply the wants of the younger branches of a family with fruit, the Seekle comes as a general favourite. This sweet, musky, delicious Pear never goes begging. Beurré Bachelier is a large green, uncut Pear, of only moderate quality; it is a good show fruit, and a strong grower. The Crassane Pear is easily recognised by its long stalk; it generally bears at the extremities of the branches, and is not a heavy cropper, but has an agreeable flavour. In my case it was planted on a north wall, which, I take it, is much too cold a situation. I have given a brief list, and shall be glad to note other articles dealing with the merits or demerits of this indispensable fruit—the Pear—in other quarters.—GEO. DYKE, *Stubton Gardens, Newark.*

EELWORM DESTRUCTION AND CONTROVERSY.

I THINK the last twelve words of your footnote to Mr. Abbey's article on "Eelworm Destruction" (page 16) would meet with the approval of many subscribers to your Journal. Perhaps these good men who write so airily in your columns, and quote certain cures one week, and the next state that the cure before mentioned is worse than the disease, little think what anxiety they cause to small growers of Tomatoes and Cucumbers like myself, to whom the loss of plants by eelworm or otherwise is a loss indeed. Besides, of what use or interest is it to your readers to watch Mr. Dyke and Mr. Abbey, or anyone else, writing caustic remarks anent one another's experience?

Reading Mr. Dyke's short article *re* the application of kainit and basic slag, I came to the conclusion that advice from such a practical source must be right, and applied the manures as advised to my borders. Now this week I understand from Mr. Abbey that I have probably poisoned my borders.

Who is right and who is wrong? "Less bantering and boasting." Just so. A little less of that and more precise and clear information would be more appreciated by the subscribers to your excellent Journal, from whose pages I have culled many a wrinkle and spent many happy hours in reading. Now, Messrs. Dyke, Abbey, and Iggulden, a plain answer to a plain question: Is it safe to plant Tomatoes and Cucumbers in my borders as prepared? I trust you will find room for this.—W. B.

[We are pleased to find room for matter which imparts or elicits definite information as well as for that which entertains and enables pleasant moments—in the aggregate "happy hours"—to be "spent in reading," but we do not invite communications in which the main object of a writer appears to be the tripping-up of another whom he likes to regard as an "opponent," and airing his own superiority. There should be no opponents in the worst sense of that term, but coadjutors who respect each other, while in different ways seeking for truth in the interests of all. At the same time many readers like occasional relief from stern work, as the following postcard indicates:—

"Plain solid beef and pudding are most excellent in their way, but occasionally the stomach craves lighter food. This applies equally well to the mind, and we, the readers of the Journal, owe 'Ess and I' a debt of thanks for calling forth that piece of light reading in last week's issue. How 'Ess and I' may like it is another question, possibly they are quite glad to be pilloried for the general benefit. 'All work and no play makes Jack (and his missus) dull.'"

Reverting to the slag and kainit mixture, obviously Mr. Dyke gave a record of practice and its results on page 547, December 9th, but at the same time clearly stated the dressing was given long prior to the planting of the Tomatoes, for, he says the soil was "again forked over in February." Mr. Dyke stated that 2 lbs. of basic slag and 12 ozs. kainit per square yard were well blended through the soil by twice forking it over. Mr. Abbey, on page 16, January 6th, says, that after several years' experiments "1 oz. of kainit and 3 ozs. of lime may be used per square yard, to each one inch depth of rich vegetable, worked, or prepared soil." Suppose the depth of soil is 12 inches, where is the difference between the dressings of the two advisers? The amounts of kainit would then be the same in both cases, while there would be a decided excess of lime in Mr. Abbey's dressing over that in the slag of Mr. Dyke, while the phosphates in this would be beneficial.

If Mr. Abbey said (as we do not think he did) that such a dressing would poison the borders they would be poisoned by his own advice. He has, perhaps, confused you by a curious reference to "12 ozs. of kainit to a gallon of water," as if Mr. Dyke had advised the solution, which we do not remember seeing, and if he did not, though he has made no complaint on the subject, we are sorry the reference appeared on the page last cited.]

HAREWOOD HOUSE GARDENS.

DURING a few days in the county of broad acres I paid a visit to Harewood, one of the stateliest of homes in a county of historic houses. As a brief outline of the exterior splendour of this seat of the Earl of Harewood was given in the *Journal of Horticulture* on the 22nd of July, 1897, my remarks will touch only on a few salient features in the houses. No one expects to find a gorgeous display of bloom or a wealth of luscious fruit in the dark and waning months of the year.

A series of large house parties had been given for the shooting season,

and this means an absorption of fruit, flowers, and vegetables. The first house I entered was one kept principally as a flowering house, about 60 feet long, and of proportionate width and height. The back wall Mr. Jeffrey has planted with an assortment of old-fashioned climbing plants too rarely seen, amongst which were observed *Swainsonia alba*; *Lasiandra maerantha*, displaying its intense purple blooms; *Luculia gratissima*, clothed with its fragrant clusters of delicate mauve flowers. *Habrothamnus elegans* was also in flower, and *Lophospermum scandens* was luxuriating on this wall in company with the peppermint-scented *Pelargonium* and Ivy-leaved varieties. Up the rafters were *Bougainvillea glabra* and *Clianthus puniceus*, whilst in the centre of the house was an arched bower of *Maréchal Niel* Roses. These climbers are all thinly and regularly trained, and no plants are allowed tall enough to obstruct the light in front of them. This is evidently the secret of their floriferousness as seen at Harewood. The centre bed of this house was enlivened with *Camellias* in flower, *Oranges* in fruit, *Chrysanthemums*, and *Indian Azaleas*, the front of the brickwork being luxuriantly draped by *Tradescantia zebrina*, often seen in a higher temperature than an ordinary conservatory, and less pleasing than here. The front stage was gay with *Chinese Primulas*, *Zonal Pelargoniums*, *Paper-white Narcissus*, and *Linum trigynum*.

The next two plant houses—stoves—have been entirely reroofed and fitted with modern ventilators since my last visit. They were mostly filled with ornamental foliage plants and climbers on the roof. *Ipomæa Horsfieldi* was displaying its charming blooms, and several plants of *Strelitzia Reginae* were opening their gorgeous flowers, and it was interesting to learn from Mr. Jeffrey that these have great endurance when cut. One forcing house was occupied with *Asparagus* and *French Beans*, another with winter Cucumbers in bearing, and also *French Beans*.

Orchids, of which there is a small collection, looked healthy. *Bouvardias*, *Calla æthiopica*, *Double White Primulas*, *Zonal Pelargoniums*, *Clivias*, *Freesias*, and *Lachenalias* were all in good health; whilst bulbs in variety, with *Lilae Charles X.*, *Azalea mollis*, and *Violets* were present to supply the wants of a great house.

In the exotic fernery the collection numbered by dozens of large plants of *Adiantum farleyense* and *Cheilanthes elegans* were most remarkable. The former, with large broad fronds, are mostly in 8-inch pots. These plants have all been grown from single crowns, which is one of the secrets of successful culture. As this house faces due south great care is exercised in shading. Recently two of these large *A. farleyense* were used on the dinner table, set in vases of gold.

Among Grapes the large old Canon Hall Muscat had still about fifty bunches hanging of a golden amber tint, and consequently perfect in finish. *Gros Colman* was also in another house, faultless in size and colour. The late house had over 100 bunches of *Lady Downe's* and *Black Alicante*, perfect in every respect. A rod of Mrs. Pince's *Black Muscat* in this vinery was almost faultless in finish. The Peaches in the four houses had made clean and well-ripened growth, bristling with fruit buds. *Royal George* is a great favourite here, and a tree or two of this variety is grown in each house. Many large Palms are required for room decoration, and in one house were some good examples of *Kentia Fosteriana*, *K. Belmoreana*, *Phoenix tenuis*, and *Chamærops Fortunei*.—F. STREET.

THE YOUNG GARDENERS' DOMAIN.

ONION CULTURE.

THE Onion requires a deep rich rooting medium, therefore the soil must be well trenched and manured. The best soil for general purposes is one of a deep sandy nature: but for exhibition, better results are obtained in a strong black or red loam, in an open situation. Prepare the ground in October by a trenching three spits deep, at the same time working in plenty of good farmyard manure, the shortest and most decomposed being placed near the surface. Leave the surface rough, so that it will be exposed to frosts. In January it should receive a heavy top-dressing of soot and lime, this being forked in during March.

For general purposes, the third week in the latter month is early enough for seed sowing, when, in the case of light soils, the surface should be raked level, and rolled or trodden firm. Sow the seeds in drills 6 or 7 inches apart, and if procured from a reliable firm, sow thinly, and leave all the plants to grow. As soon as they are 2 or 3 inches high, hoe them carefully, and about every fortnight afterwards as long as they continue to grow. Keep free from weeds, and in dry seasons they will be greatly helped by liberal supplies of water and a mulching of short manure.

As soon as the tops show signs of ripening pull them up by hand, and lay two rows facing each other, the roots being uppermost to get plenty of sun and air. If the weather is fine turn them at intervals of two or three days, so that every part will become properly ripened. In the event of showery weather they may be better harvested if empty cold frames are at hand, laying them out thinly, turning them as previously advised, and giving them plenty of air. When well finished the loose scales and tops should be removed from them, sorting out the picklers and diseased ones as the cleaning proceeds. Store them in cool airy sheds free from frost, or in a room kept specially for them.

For exhibition the ground should receive the same treatment, and the seeds be sown in boxes in February placed in a cool vinery or frame. When the young plants are an inch or two high prick them off into other boxes of light soil 2 or 3 inches apart, growing them in gentle heat, and gradually hardening before planting 10 inches apart each way. When growing freely liberal supplies of liquid or artificial manure are beneficial, also hoeing and mulching as before.

stated. Wood ashes or burnt earth is said to prevent or check the maggot to a great extent. This should be sprinkled in the drills when sowing, or in the holes when planting out. Ailsa Craig and Golden Roecca are good for exhibition, and Bedfordshire Champion, James Keeping, and Brown Globe are first-rate late keeping varieties. — *NIL DESPERANDUM.*

CHRYSANTHEMUM PRINCESS VICTORIA.

GOOD white decorative Chrysanthemums are not too plentiful about Christmas time. The above variety is excellent in every way, and should become popular with market growers, as it requires little or no tying, and is a mildew-resisting variety. It is dwarf and sturdy in habit, with splendid foliage well up to the flowers, which are borne on stiff stems. The flowers are large and full. It is a creamy white in colour, sometimes tinted with lemon or pink, but if afforded a little artificial heat it opens much better and becomes white. Other good late varieties are G. W. Childs, Golden Gate, L. Canning, and W. H. Lincoln. — J. G.



HARDY FRUIT GARDEN.

Pruning Wall Fruit Trees.—*Cordons.*—If single cordons of Apples or Pears are not originally planted too thickly, they will only require at the winter pruning the side shoots shortening back to basal buds, or as near as possible to the main branch, without destroying good fruit buds. This applies to all the forms of cordons, whether grown as single vertical or diagonal stemmed plants, or those having two or more stems. The chief care is in the first formation of the forms so as not to train in main branches too closely, in no case less than a foot asunder. Where branches exist closer together than this it is advisable that the most crowded be removed. This is especially necessary with old established cordons, having clusters of spurs, which in the aggregate take up a large amount of space.

Though the branches may have apparently room enough as indicated by present appearances, yet in summer the spread of foliage is so ample that one branch will unduly shade another, and not all the fruiting spurs will be able to obtain sufficient light. Branches also trained at the orthodox distances asunder may, if crowded with spurs, be greatly benefited by having the ill-placed, projecting spurs shortened back, dead wood or weak spurs cut out. Young branches in the process of formation train straight in the direction desired.

Horizontal-trained and Espalier.—Apples, Pears, and Plums are chiefly grown in this form, and if the main branches are kept a foot to 15 inches asunder they will long continue fruitful. Annual attention must be given to reducing crowded spurs, especially not allowing those situated on the upper branches to overhang to an undue extent those below them. Shortening the strongest growing foreright shoots in summer is conducive to the plumping up of fruit spurs at the base, and to these the side shoots ought now to be pruned. The leaders of branches which have not reached their limit of space may be shortened but little, only unripe ends being removed; but if there is no more space to fill, cut closely back.

Fan and Unrestricted Trees.—Trees which do not take kindly to restricted training are best grown in fan shape. But there are restricted trees in fan form as well as unrestricted. In some positions, Pears may be grown on the former plan with branches radiating out like a fan and extending to any length the space admits of; but the points at least of the branches ought not to be closer together than a foot. The summer pruning and the winter shortening are the same as with other restricted forms.

Plums and Cherries, chiefly of the Kentish and Morello type, enjoy free extension, whereby the oldest and worn-out branches can be constantly renewed with young wood. The Cherries named bear the best fruit on well-ripened growths of the previous year, and these should be freely nailed or tied in, shoots for the purpose being specially retained at the base of the current year's bearing growths. Secure them 4 inches apart all over the trees. Previously, however, overhaul the principal branches, cutting out any exhausted parts.

Plums are better adapted for bearing fruit on older growths, shoots two and three years old bearing freely. Retain them while they remain prolific. After they cease to be so, occupy their places with younger shoots, trained in for the purpose. A combination of branches bearing natural and artificial spurs, and younger growths bearing natural spurs only, is the outcome of this method, but it is very important to guard against overcrowding.

Pruning Outdoor Vines.—Vines on walls should have the pruning completed. If the spur-furnished branches are not too old retain them, pruning back the lateral shoots to two buds, selecting the best of these when they break into growth. Also, if there be room, it is desirable to lay in a number of well-ripened canes, pruned to about 4 feet in length; these, being reserved for the purpose, will profitably utilise any vacant places, and may be trained-in to take the place of any old or exhausted branches. After pruning dress the branches and rods with Gishurst compound, 8 ozs. to the gallon of water, using warm, and brushing well

into every angle and crevice. Softsoap, 4 ozs. to the gallon, or any other effective insecticide, will also answer, the object being to destroy red spider, to which Vines on warm walls are subject.

Manuring Fruit Trees.—*Mulching.*—A liberal mulching of decayed manure conveyed to the fruiting quarters during frosty weather, and spread upon the soil over the roots of trees and bushes, will be of great benefit to all except those growing very vigorously and not bearing. Trees and bushes which bear good crops require annual assistance, either with natural or artificial manure or both combined, in order to afford substantial support to the roots. It attracts them to the surface, preventing their descending into the subsoil in search of food and moisture.

Applying Liquid Manure.—Trees on grass, which cannot so well have manure applied over the roots, may receive applications of liquid manure if such be available. In emptying cesspools or sewage tanks the contents may safely be given to established old fruit trees, diluting freely with water should it be too strong. Pour it over the roots as far as they extend.

Trees for Grafting.—Old trees intended to be grafted with improved varieties now require the branches heading down to near the point of insertion of grafts.

Collecting Scions.—The scions of the various varieties should be tied separately in bundles and labelled; then lay them in sand or soil on a cool north aspect, so that they may remain dormant until the grafting season.

FRUIT FORCING.

Vines.—*Earliest Houses.*—When the air is sharp and cold great care must be given to the ventilation, for draughts of cold air cause injury. Some ventilation, however, is necessary to prevent the leaves becoming thin and poor in texture, as in that condition they are liable to be scorched and to fall a prey to red spider. Disbud when the best shows for fruit can be distinguished; tie down the shoots before they touch the glass, taking care not to bring them down too sharply or to tie too tightly. Stop two or more joints beyond the bunch, not, however, acting on any rule-of-thumb principle, but be guided by the space at command. Do not burden the Vines with superfluous bunches, one on a lateral is sufficient, for overcropping and overcrowding the foliage are great evils. As the bunches come into flower maintain a day temperature of 70° to 75°, falling 5° however during the night, and keep the atmosphere rather drier. Supply water or liquid manure as required, but not making the soil sodden, as this often hinders root formation, gives a plentiful protrusion of aerial roots, and a sappy growth with shanking. Outside borders must have attention, which will be very slight where they have been covered with leaves and dry fern or litter, but where fermenting materials are used they must be replenished, keeping a good heap of leaves and stable litter in the reserve ground to admit of a supply being obtained readily.

Houses to Ripen Grapes in June.—Start the Vines at once. Supply the inside border thoroughly with water a few degrees warmer than the house. Liquid manure at this stage will come into use later on, as it must undergo certain changes before it can be of any use to the Vines. To economise fuel fermenting material may be used inside the house, throwing it into a heap on the floor and turning frequently to liberate the ammonia and maintain a genial warmth and moisture constantly, adding fresh material as necessary. Where fermenting materials are not available the floors and borders may be sprinkled with liquid manure daily. The temperature should be 50° to 55° by artificial means, and 65° from sun heat. If the roots are outside they will need protecting with a good thickness of dry leaves, litter, or fern. This will secure to them a much higher temperature than if there were no such protection, and is often better than fermenting materials that are not well attended to in maintaining the heat. Where the border has been exposed to cold rains and snow the temperature will be little, if any, warmer than the surrounding soil, and a good bed of fermenting material can be used with advantage, placing it on the border about 18 inches thick. This will, to some extent, warm the soil and encourage the growth of the roots, but it must be removed by the time the sun gains power to warm the soil, leaving only enough for a mulch.

Houses from which the Grapes Have been Cut.—Prune the Vines without delay. It not only avoids danger of bleeding, but insures complete rest. Cut to a plump bud as near the base as possible. Some Vines, however, do not prove satisfactory when closely pruned. The operator must act accordingly, and choose the second to fourth bud, or the best eye on firm well-ripened wood wherever situated. This will cause the spurs to become long, but that can be obtained by training a shoot from the base to displace it after bearing, and the Vine will be all the better for the extra foliage, showing it in the finish of the crop. Remove all loose bark, avoid peeling and scraping, washing the rods with softsoap and water, and after thoroughly cleansing the house dress with an insecticide. Clear away all loose soil, supply fresh lumpy loam in its place, and sprinkle about half pound of some approved fertiliser per square yard where the Vines are in need of substantial support, the material being pointed in. Keep the house as cool as possible to secure complete rest.

Late Grapes.—It is absolutely essential that Grapes hanging late be kept cool and uniform in temperature. Maintain a mean temperature of 50° for Muscats, 45° for other varieties that have finished late, with a dry atmosphere where such are hanging. Examine every bunch at least twice a week, and remove any decayed berries. Ventilate the house on fine dry mornings, and keep closed when the weather is damp, but a gentle warmth in the pipes is necessary to prevent the deposition of moisture on the berries. It is hardly possible to keep Grapes in good condition beneath leafy roofs, or even in the best structures can the Grapes

have the coolness and uniform temperature essential to their sound keeping on Vines after the sun gains power; besides, their hanging is not good for the Vines, which to do well require starting in good time to insure a satisfactory finish of their crops. The Grapes may now be removed to a dry room, where they will keep as well as on the Vines. The Vines must then be pruned, thoroughly cleansing the house. Dress the Vines, and wash every part thoroughly with some approved insecticide, applying with a brush. Air should be admitted freely in favourable weather, seeking to give the Vines as long and complete rest as possible. Where the borders are not satisfactory lift the Vines, and relay the roots in fresh compost; and where the Vines have inside and outside borders the renovation may be accomplished without loss of crop by renewing the former one year, and the latter the next.

Strawberries in Pots.—Proceed steadily with plants that are not required to give fruit at a particularly early stated time, especially in severe weather; 50° to 55° is ample at night for those started in December, and 60° to 65° by day, erring, if at all, on the safe side—the low—therefore 5° less in cold weather and the absence of sun is advisable. Ventilate whenever there is a chance. The trusses rise boldest and are strongest when the plants have the foliage well elaborated. Close atmosphere induces soft tissues, weakly organs of fructification, imperfect sets, and deformed, ill-shaped fruit.

Introduce more plants to shelves in Peach houses or vineries started about this time. Rectify the drainage of the pots, remove moss or other matter from the surface of the soil, and wash the pots clean. Surface dress with an approved fertiliser mixed with a little fine soil. If the plants do not push freely use a little superphosphate, three parts, and crushed saltpetre, one part, a thimbleful or two to a plant, according to size of pot. Noble is an excellent variety for introducing now to fruit in April, also Auguste Nicaise, the latter being the brighter fruit, equally large, prolific, and better flavoured. Royal Sovereign, President, and Sir Joseph Paxton may also be introduced, but to maintain the succession of fruit unbroken plants of La Grosse Sucrée and Vicomtesse Hericart de Thury must also be introduced at the same time.

THE FLOWER GARDEN.

Sowing Tuberous Begonia Seed.—There are two good reasons why the seed of Tuberous Begonias should be sown early. One is because such very small seed always germinates more surely before the sunshine has gained greatly in power, and the other is that unless the plants are raised early in the year they will not have attained a serviceable size at bedding-out time. Most seedsmen now supply reliable strains of Begonias for bedding out. Those with flowers borne on erect stems are rightly preferred, the drooping varieties being better adapted for vases, window boxes, and hanging baskets. If proper precautions are taken every seed should germinate, a small packet yielding 200 or 300 plants, or perhaps more, and these may be had each 4 inches or more through by the first week in June, thus insuring a good display before the summer is far advanced.

Prepare pans, in preference to pots, by carefully draining, covering the crocks with moss, on this placing some coarse soil, and finish off with about 2 inches of a very fine mixture of loam, and either leaf soil or peat in equal parts with a little sand added. The soil used ought to be perfectly free of worms and insects generally, even if this necessitates well roasting it over a fire. Make the surface perfectly level and firm, and then well moisten it either by partly immersing in water or by gentle syringings. This to be done at least six hours prior to sowing the seed. Do not surface over with silver sand, as the latter does not afford the tiny seedlings, newly germinated, any root-hold, and numbers of them perish accordingly. Sow the seeds as carefully and thinly as possible; for patches of seedlings are extremely liable to damp off wholesale.

Hotbeds, unless perfectly free of worms, are bad places, though most often selected, for Begonia raising. An upheaval of any kind or souring of the soil is likely to prove fatal to many seedlings, and the safest and best place for the pans are shelves suspended, not far from the glass, in a forcing house or plant stove. Cover them closely with squares of glass, and the latter with a good thickness of moss or brown paper. Also protect the pans from sunshine. Never once must the soil in the pans be allowed to become dry, nor should they be watered through a can. A short period of dryness would prove fatal to the sprouting seeds, and however gently water may be applied on the surface, the chances are this would have the effect of dislodging and spoiling many of the seeds or tiny seedlings. Whenever the soil is approaching dryness immerse the pans in a bucket or tank of tepid water just deep enough for the moisture to soak upwards without at the time actually reaching the surface.

The seeds sometimes germinate in a fortnight or so, the time being largely determined by their age, and directly the tiny seed leaves are detected admit light gradually, and also slightly block up the glasses, taking good care though that no sunshine shall reach the Begonias. By way of a preventive of damping either wipe or turn the glasses every morning. The seedlings will require to be pricked out long before they are large enough to be picked up with the finger and thumb.

Dwarf Lobelias.—When a good strain is procured seedlings of these are as compact, floriferous, and true to name as are cutting-raised plants of named varieties. The seed should be sown early, and much as advised in the case of Tuberous Begonias, and then there will be less likelihood of failures than there would be if sown a month or six weeks later on. If the seedlings are duly pricked out and grown on without receiving a severe check extra strong stocky plants will be ready for bedding out late in May.

THE BEE-KEEPER.

MAKING CANDY.

OWING to the mild weather experienced throughout the country many colonies of bees have become short of stores. It is now a well-known fact that much less food is consumed by bees when there is a low temperature throughout the winter than when the weather is mild, as it has been up to the present time. It is therefore advisable to supply the bees with stores in the best possible condition, so that they may take it without becoming chilled. But how is this to be done?

If given in the form of syrup the bees will not take it readily, and if an excess of moisture is taken into the hive at this season dysentery will follow. If dry sugar feeding is practised, and a sharp spell of frost should set in, the bees will starve, although there may be an ample supply of sugar within a few inches of the cluster. The best possible food at this season is soft candy where feeding is really necessary. But from inquiries recently to hand some bee-keepers have found a difficulty in making soft candy.

In making candy it is as well to bear the fact in mind that it is much easier to make it hard than to keep it soft. If made too hard the bees cannot masticate it, and the first warm day that comes they will set to work and remove it from the hive. The two chief points to be observed are not to boil it too long, and after its removal from the fire to keep it well stirred. An enamelled iron preserving pan answers the purpose admirably; fine granulated sugar should be used in the proportion of 6 lbs. of sugar to one imperial pint of soft water, into which must be stirred one teaspoonful of cream of tartar.

The water should be first put in the pan, and the sugar gradually added after being placed on the fire, keeping it constantly stirred until it boils. Care must be taken that it does not boil over the side of the pan; to prevent this it is an advantage to withdraw slightly from the fire, but not sufficient to prevent it boiling. Continue stirring until the froth, which at first will cover the whole mass, has disappeared. When it has boiled two or three minutes lift out a teaspoonful and drop it into a cup of cold water, which has been placed in readiness. If it remains at the bottom of the teacup like thick paste it is in the right condition for removal from the fire. If, on the contrary, it mixes readily with the water, it has not been boiled sufficiently, and the same operation must be repeated. If boiled too long it will be crisp and hard, and no after treatment will make it soft unless more water is added, and it is again boiled as above.

After the removal of the pan from the fire it will be an advantage to place it in a tub of cold water, care being taken that the water does not flow over the side of the pan and thus become mixed with the sugar. Continue the stirring process, and in a few minutes it will have a greasy appearance of a dirty grey colour, afterwards becoming quite white.

Care must be taken that it does not become too stiff before being poured into shallow dishes, which should have been previously prepared by placing a sheet of paper in each. The advantage of using paper will be at once seen after the candy has become cold, by the readiness with which it may be removed from the vessels in which it was poured. The paper will adhere closely to the candy, and the dishes may be again used for any purpose required. If the operation has been carefully carried out it will result in a fine-grained soft candy, which will be readily taken by the bees, and bee keepers will not complain of their bees casting the candy out of their hives.

HOW TO FEED BEES WITH CANDY.

It has been necessary to give clear instructions as to making candy, but quite as much care is essential in supplying bees with the necessary food, as at this season more than any other they should not be disturbed if it can be avoided. Candy must always be placed directly over the cluster. Bees at this season will be found snugly clustered in the middle of the hive. If a strong colony of bees be examined at the end of the honey flow, the outside combs in the hive are full of sealed stores; but examine them a couple of months later, and the honey will be found to have all disappeared from the extreme outside combs; internally they are the same as when previously examined.

Why is this? Because the bees know full well that if their food supply is stored so far away from the cluster, and a spell of severe weather set in, they would be unable to reach it, and the result would be death from starvation. Bees never make this mistake when left to their own devices. It is well, therefore, to imitate Nature as far as possible. For this reason we place the candy so that the bees may reach it without any danger of becoming chilled.

I prefer to cut a hole in the quilt, turn the lap back, and place the cake of candy over the aperture. When this is done an extra thickness

of some warm material should be placed directly over it, care being taken that there are no air spaces round the edges of the quilt.

If the bees are in good condition and kept warm, and the candy is made according to the above directions, the bees will often take it in preference to the sealed stores they may have in their hive, wisely taking the extra supply of food provided for them, they will then fall back on their stored supplies when this fails. An extra supply of candy may be given as often as necessary.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Armitage Bros., Ltd., Nottingham.—*Seed Manual*.
Barr & Sons, King Street, Covent Garden.—*Seed Guide*.
W. Bull, King's Road, Chelsea.—*Seeds*.
B. R. Davis, Yeovil.—*Begonias*.
Kelway & Son, Langport.—*Wholesale Seed List*.
Kent & Brydon, Darlington.—*Seeds*.
J. Laing & Sons, Forest Hill.—*Seeds*.
Pape & Bergmann, Quedlinburg.—*Seeds*.
W. Paul & Son, Waltham Cross.—*Seeds*.
J. R. Pearsons & So., Chilwell.—*Seeds, Chrysanthemums*.
S. F. Richmond, Ossett.—*Chrysanthemums*.
C. Sharpe & Co., Ltd., Sleaford.—*Standard Seeds*.
Louis Van Houtte, Père.—*Seeds and Plants*.
W. Welch, Rush Green, Romford.—*Seeds*.



* All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

A Curious Potato (W. Brown).—Potatoes, such as the one you have sent, are not so uncommon as you appear to think. We have seen cases of it before, and will give further particulars relative to it in our next issue.

Lawn Manure (T. C. C.).—Your question was answered last week. You do not repeat the formula, which was not preserved. If the soil is of a cold and wet nature withhold the salt and use sulphate of ammonia instead of nitrate of soda in the spring.

Mistletoe on Apple Trees (M. F.).—We advise you to try the two methods suggested below with several seeds, of which some may be expected to germinate. The berries should be inserted in a notch cut in the bark on the under side of a branch. Avoid crushing the seed, and have the embryo directed towards the branch. To prevent birds disturbing the seeds after being placed in position cover with tiffany or other light material. The seeds may also be fastened to a smooth part of the tree by the sticky substance surrounding them, but protected from birds. Insert the seeds at once.

Trees and Shrubs that Rabbits will not Eat During a Severe Winter (G. W.).—The following trees and shrubs were not injured with us during several severe winters, in pleasure grounds where both hares and rabbits abounded:—Alders, Andromedas, Birches, Bitter Willow, *Box, Corsican Pine, Irish Yews, Kalmias, Periwinkles, *Rhododendrons, and *Spurge Laurels. What they will not eat in severe weather, when there is little choice, or, say, only the above, we have no experience, save that of those marked with an asterisk only survived stamping by the rabbits, the Periwinkles being buried beneath snow, but if eaten off it would not matter a great deal as they spring up again from the roots. Rhododendrons, all points considered, are the best. Several trees and shrubs the animals only nibbled, but they had choice of many hundred species, which makes just all the difference.

Trachelium coeruleum (Nemo).—This plant is a native of the South of Europe, and though moderately hardy it suffers from unusually severe winters, therefore it is desirable in most cases to preserve a plant or two under glass; but it is easily raised from seed, and seedlings flower the same season. Allied to the Campanula, it nevertheless differs from many of that genus in its habit of growth; it does not throw up suckers like most of that family, but produces side shoots, which make excellent slips or cuttings. These, if put into a cold pit or under a hand-glass, where some protection can be afforded them in winter, make good plants in the following spring.

Cropping Vines (W.).—Your question as put, and in the absence of information as to the age and condition of the Vines which have been replanted in fresh soil, and the state of the roots, does not admit of a definite reply as to "how many bunches the Vine should be allowed to carry this year." Weakly Vines produce $\frac{1}{2}$ lb. bunches, strong healthy Vines bunches six times that weight. We can only advise you to let the Vines start very steadily without any forcing. If the roots were healthy and abundant a crop equal to about half that which finished well last season might not be too heavy for them. It will be safer to err in under than over-cropping, and then, if all goes well with the Vines, they may be expected to give compensation in future years. Overstraining them this summer would be a great mistake that may have far-reaching consequences.

Dahlias Showing "Eyes" in the Flowers (F. S. C.).—The chief cause of Dahlias having "eyes" is usually lack of that steady development of the plant so essential to the proper building up of the flower, and is best avoided by a proper preparation of the soil, not using freshly manured ground, but having it in good heart, deeply stirred and in good tilth. This will secure sturdy growth and well formed blooms provided the plants are given plenty of room and sturdy plants are put out in proper time. Wet seasons tend to encourage the production of "eyes," and too severe disbudding acts similarly by inducing grossness of plant, also weakly cuttings seldom throw good flowers. This should be avoided by selecting short-jointed cuttings. The tubers you have are more likely to give the proper sort of cuttings than any tubers you may purchase, and you may propagate from them with every confidence, only give the plants plenty of room, and keep the growths fairly thin.

Increasing Ficus elastica (F. D. H.).—You will find the present time is suitable for propagating this plant, either by shoots taken off with a shoot or by eyes. When it is propagated by eyes they should be taken with a leaf attached to each, and be placed in silver sand to keep them from bleeding. Insert them in small pots well drained, in a mixture of peat and cocoa-nut fibre, and plunge in a strong bottom heat of 90°, with a little sand under each cutting. If they are not placed in a strong bottom heat the eyes will not break. When the eyes have rooted and commenced growing they should be repotted into 48-sized pots, in equal parts of turfy loam and peat, with sufficient sand to keep the soil open. The plants should be placed in a temperature of about 70°, and be syringed frequently; occasionally sponging the foliage is also highly beneficial. The plants should not be allowed to become root-bound until they have grown to the allotted size, when they will be greatly benefited by liberal supplies of liquid manure. During their growing season they should never be allowed to become dry at the roots, as dryness causes the leaves to turn yellow, and spoils the beauty of the plants. Shoots taken off with a heel will make plants much quicker than raising them from eyes; and it is the safest plan, for if strong bottom heat is not afforded, the eyes, as before mentioned, will not break into growth. When only a few plants of rapid growth are required we advise that they be raised from cuttings, but when a great number of small plants is required the mode of raising them from eyes must be adopted.

Vine Weevil Grubs Infesting Roots of Adiantum cuneatum (C. L.).—We have communicated with the correspondent referred to. He is unable to account for the corrosive sublimate solution, 1 oz. to 6 gallons of water, failing to destroy these pests, except on the supposition that the article differed from that which he found successful, or that the poison was not properly dissolved in hot water. The grubs are among the most difficult to kill, as they nestle in an earth cavity, with the head coiled under the tail, the air cell formed by the coil of the body throwing off solutions, aided by the oily nature of the skins of the larvæ. In most serious infestations which have come under our notice we have found that the potting was too light and the soil not kept constantly and uniformly moist. Some persons find one remedy the best, some another. We have records of success by the use of hot water—temp. 140° to 145°. This would destroy some plants, but has not injured Adiantums during what may be termed their resting period, but the soil must be fairly moist. Clibran's Eucharis mite killer and Bentley's spidicide have also been found effectual by cultivators, applied according to the vendors' directions. The soil ought not to be dry when they are used, and it is best to close the drainage with clay, then give sufficient of the preparation to show or stand on the surface, indicating soil saturation. We once took possession of a number of "dried off" Adiantums infested with weevil maggots. All the soil possible was removed and burned, and the roots plunged in hot water, over 140°, where they remained till the water cooled. It was a case of kill or cure. They were potted firmly, started very slowly (a few not at all), but eventually developed into as fine plants as could be desired. The soil was kept moist, summer and winter, except in some half dozen pots for trapping the stragglers, and the weevil scourge was stamped out.

Names of Fruits.—Notice.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow

themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. (J. C. A.).—Trumpington, not nearly so good as Cox's Orange Pippin. (W. N.).—Hornsea Pearmain, a very useful Sussex Apple. (O. E.).—1, Bramley's Seedling; 2, Northern Greening; 3, Braddick's Nonpareil. (Nemo).—The Pear is Nec Plus Meuris.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (North Wales).—The Cattleya was quite dead when it reached us. Pack another one properly, and we will endeavour to assist you. (S. T. S.).—1, Zygopetalum macillare; 2, Adiantum decorum; 3, Anemia collina. (N. L.).—1, Cyathea dealbata; 2, Hypolepis distans. (D. F. F.).—1, Cypripedium Sedeni; 2, C. villosum; 3, Maxillaria picta; 4, Cypripedium insigne. (N. F. P.).—1, Polypodium aureum; 2, Adiantum mundulum; 3, A. cuneatum deflexum.

COVENT GARDEN MARKET.—JAN. 12TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1 6	to 4 0	Grapes, lb....	0 8	to 2 0
Cobs ...	22 6	24 0	Lemons, case ...	11 0	14 0
Filberts, 100 lbs. ...	0 0	0 0	St. Michael's Pines, each	2 6	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz....	1 0	0 0	Parsley, doz. bnchs....	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle... ..	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzoneria, bundle ...	1 6	0 0
Cucumbers... ..	0 4	0 8	Seakale, basket... ..	1 6	1 9
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 4
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 0
Mushrooms, lb....	0 6	0 8	Turnips, bunch... ..	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vita, var., doz. ...	6 0	to 36 0	Ferns, var., doz. ...	4 0	to 18 0
Aspidistra, doz. ...	18 0	36 0	Ferns, small, 100 ...	4 0	8 0
Aspidistra, specimen ...	5 0	10 6	Ficus elastica, each... ..	1 0	7 0
Azalea, per doz. ...	30 0	42 0	Foliage plants, var., each	1 0	5 0
Chrysanthemums, doz. ...	4 0	9 0	Hyacinths, doz. pots ...	1 6	2 0
Cineraria, per doz. ...	9 0	15 0	Lilium Harrisii, doz....	12 0	18 0
Cyclamen, per doz ...	12 0	18 0	Lycopodiums, doz. ...	4 0	6 0
Dracæna, var., doz. ...	12 0	30 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica hyemalis, per doz ...	9 0	15 0	Palms, in var., each... ..	1 0	15 0
„ gracilis, per doz. ...	6 0	9 0	„ specimens ...	21 0	63 0
„ various, per doz. ...	8 0	12 0	Pelargoniums, scarlet, doz.	4 0	6 0
Euonymus, var., doz. ...	6 0	18 0	Tulips, various, doz. bulbs	0 9	1 6
Evergreens, var., doz. ...	4 0	18 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	4 0	to 6 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Asparagus, Fern, bunch... ..	1 0	2 6	Mimosa or Acacia, bunch		
Bouvardias, bunch ...	0 6	0 9	(French) ...	0 9	1 0
Carnations, 12 blooms ...	1 0	3 0	Narciss, white (French)		
Chrysanthemums, 12 bnchs. 4 0	15 0		dozen bunches ...	1 0	2 6
„ 12 blooms 1 0	4 0		Orchids, var., doz. blooms	1 6	12 0
Daffodils, doz. bunches ...	12 0	18 0	Pelargonium, doz. bnchs.	6 0	9 0
Eucharis, doz. ...	4 0	6 0	Roses (indoor), doz....	0 6	1 0
Gardenias, doz....	3 0	6 0	„ Tea, white, dozen ...	1 0	2 0
Geranium, scarlet, dozen			„ Yellow, doz. (Perles)	1 6	4 0
bunches ...	6 0	9 0	„ Safrano (English), doz.	1 0	2 0
Hyacinths (Roman) dozen			„ (French) per doz. ...	0 9	1 6
bunches ...	0 9	1 0	„ „ per 100... ..	5 0	7 0
Lilac (French), bunch ...	3 0	4 0	„ Pink, dozen ...	1 0	2 6
Lilium longiflorum, 12			Smilax, bunch ...	1 6	2 6
blossoms ...	4 0	6 0	Snowdrops, 12 bunches ...	1 0	2 0
Lily of the Valley, 12			Tuberose, 12 blossoms ...	0 4	0 9
sprays ...	1 0	2 0	Tulips, dozen blossoms ...	0 6	1 6
Maidenhair Fern, dozen			Violets, dozen bunches ...	1 6	2 0
bunches ...	4 0	8 0	„ Parme (French),		
Marguerites, doz. bunches	2 0	3 0	bunch ...	3 0	4 0



OUR EGG PRODUCTION.

We have been much interested in the letter on the above subject written by Colonel Baghot-De La Bere, and recently published in this Journal, as we have paid some attention to poultry in special relation to egg laying, and now sell about 25,000 eggs per annum.

There can be no doubt that a national poultry test such as is proposed in the above letter, if properly carried out, would settle a very knotty question, and either show farmers how to turn an extra penny, or relieve them from the stigma which now more or less attaches to them that they are both obstinate and wanting in enterprise. Farmers have been a very much advised class, the advisers generally being townspeople, and the advice almost always advocated the larger production of articles of food which they are keenly interested in seeing put on the market at cheap rates. It is therefore but natural that the farmer should be a little sceptical as to the disinterestedness of his would-be teachers, and as to the value of their advice.

As the carrying out of each test would involve the expenditure of about £20 in plant, it is apparent that only people of means who have a keen interest in the subject would be likely to take the matter up. It follows, therefore, that landowners who have land in their own occupation would be the most likely people to look to for help. They have a direct interest in everything connected with the agricultural industry, upon the success of which their very existence may be said to depend, and it is to them that Colonel Baghot-De La Bere must turn for assistance in his enterprise, and he should not do so in vain.

We do not think that farmers will be found in sufficient numbers willing to spend good money, as well as give the time and trouble necessary to properly carry out the experiments, but we hope we are mistaken, and if we are not we still hope that others with the will and power to do so will conduct the experiments for them.

Colonel Baghot-De La Bere makes the assertion, and admits that it is a bold one, that no such experiment as he suggests has ever been made, that no one has ever really tested this question, not even in a single instance. We think this cannot be absolutely correct, but would fain suggest that when any such trials have been made the results have not been very encouraging, and therefore little or nothing has been heard of them.

We have in the light of our own experience made an imaginary balance-sheet of a forty-fowl test. We have carefully estimated the various items of expenditure (the system being to buy pullets and sell hens and to do no rearing), and find that it would require a high egg average per hen to pay 1s. 6d. per head per annum, without reckoning anything at all for labour and brain work. These are our figures:—

Wire fencing, posts, &c., and labour ...	£7 5 0
Fowls' house ...	7 0 0
Tools, &c. ...	0 15 0

£15 0 0

Forty pullets at 3s. each ...	6 0 0
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£21 0 0

Interest and depreciation on the live stock would be about one-third, on dead stock about one-fifth. Here is the balance-sheet:—

5000 eggs, at } £20	Corn and green food ...	£12 0 0
8s. per 100 }	Rent ...	1 0 0
	Grit, &c. ...	0 10 0
	Interest and depreciation, hens	2 0 0
	„ „ wire, &c....	3 0 0
	Balance ...	1 10 0
		£20 0 0

In arriving at the £12 we have charged for food, we have allowed 11 lbs. of mixed grain per day, or 5 $\frac{1}{2}$ lbs. at each meal. The mixture

at present would cost 10d. per 14 lbs. at wholesale farm prices, and at this price the grain would cost £12 per annum. This £12 would, of course, include the mixed ration of meal and roots to be used as the morning meal during autumn and winter. The roots might be a little cheaper than the grain, but the cost of grinding the latter into meal and boiling the roots would make this mixed ration cost quite as much as the corn pure and simple.

Perhaps 125 eggs per hen may be considered a low laying average, but this is what we find by experience that hens will produce when well fed and with an unlimited grass run. We can hardly think that limiting the run will increase the eggs.

Good pullets of laying breeds, such as Minorca, Leghorn, or Houdan, or first crosses of these kinds, could not be bought for less than we have allowed—viz., 3s. each, and the culls would not make more than half this price in an ordinary market. There could hardly fail to be deaths amongst the stock, and twenty pullets would have to be bought each year. It does not therefore appear that 33 per cent. is an extravagant allowance for interest on original cost and depreciation annually.

One very important question that will have to be answered, if such success attend the outcome of this test that English farmers are induced to reconsider their position as regards egg production, and to increase the supply on any large scale, is this: "If Great Britain were to increase her egg production by 1,300,000,000 annually would the price remain what it is, and would the importation of foreign eggs cease?"

We have suffered from over-production of breadstuffs, we are now threatened with over-production of meat; will the same thing apply to poultry and eggs? The glut in poultry is already with us; dressed fowls and ducks could hardly be sold at some of the Christmas markets. The frozen poultry from abroad has probably a close connection with that.

When we consider the lowness of freights from abroad, and the ease with which eggs can be conveyed when properly packed, it seems idle to suppose that our foreign egg supplies would be even appreciably reduced by any competition that can possibly be organised in this country. By all means let us encourage home production; but we must not delude ourselves into the belief that we can keep our egg market to ourselves. We might as well try to supply ourselves entirely with home made cheese; in fact, there would be quite as good a prospect of success—nay, a better one.

It will be observed we have charged nothing for labour, as it is so difficult to estimate without trial.

WORK ON THE HOME FARM.

We have had to finish leading manure over soft roads and lands, and the work has been heavy, but all is cleared off for the present, and we are glad of it.

Potatoes have risen in price and are being sold in moderate quantities for immediate delivery. The work of dressing up and weighing finds occupation for spare hands, and delivery to rails for a pair of horses. We have also been thrashing and delivering Wheat, which has also hardened in price; the rise has not been great, but it has been gradual and steadily persistent, which should be a good augury for the future.

Sellers of Potatoes just now have no trouble in making good prices at home, and will be well advised to avoid sending any away to be sold on commission. "Sell at home and do not be afraid to ask a high price," must be the motto this spring.

As Potatoes are rather small this year, the higher prices tempt us to make the ware sample smaller and thus to rob the seed of just the size which ought to be its best feature; thus we spoil both ware and seed. This argument will be all the stronger if the seed size are not required for planting purposes; for in a dear time there is always a demand for good sized seed at a fair price for eating purposes, but the tubers must not be too small or they will be useless as such.

Turnips did not suffer from the brief frost, and are splendid food for both sheep and cattle. Sheep lair is now good, and the animals are doing very well. The same may be said for cattle which have abundance of capital food. Straw certainly is a little short of bulk, but the quality is splendid, and Turnips being now plentiful, supplies all round will be ample to see us through to the young grass.

Sheep of all kinds have been very healthy the last three months, losses having been almost nil. Hoggets to be fit for killing in March must have a good supply of cake, which may now be gradually increased until 1 lb. per head per diem is reached. A little sulphur mixed in the dry food once a week is a very good thing to keep the blood in good order whilst the animals are undergoing this forcing treatment. A supply of rock salt must be always within the animals' reach.

BRITISH EGG PRODUCTION.

I HAVE read the remarks upon this subject in a recent issue from the pen of Mr. Baghot-De La Bere, and whilst I am fully alive to the importance of the matter to which he draws attention, I cannot support the methods by which he would prove, or disprove, the profitability of keeping poultry. The second condition which he lays down, "Each flock of forty shall be wired in, and confined upon an acre of grass run,"

condemns the whole thing. Firstly, it is unnatural, and consequently not a fair test; and secondly, the cost of enclosing will be a serious item. Is it to be charged as an expense? If so, the result is a foregone conclusion—viz., failure.

That fowls pay, and pay well, under proper management is easy to prove, but so far as my experience goes fowls never did, and never could, pay if enclosed with wire. I of course except fancy breeds, where the eggs are sold at high prices for sitting. The great point in the management of fowls is that they shall have fresh sweet land to run on, and a second point of great importance is shelter. When fowls are confined in a wire run it is difficult, and often impossible, to give them shelter from hot sun and storm, such as they can obtain when running at large under trees and buildings; and my experience is that, putting this matter aside, it is only a question of time, when fowls are confined, before disease makes its appearance.

The mistake that many writers upon poultry make, and which has wrecked so many poultry farmers, seems to me to show itself in this passage:—"If satisfactory results can be shown from a single flock we have something to warrant an increased number being kept, four flocks upon 4 acres, or eight upon 8 acres," and so on. My experience is quite opposed to this; forty fowls, with a free run on grass and shelter of buildings and bushes, thrive and pay; double the number, with the same advantages, still pay, but not nearly so well, and with forty fowls running at large, and forty in wire pens, those in the pens lose just about as much as the others gain.

This is a brief summary of my experience. It is perhaps not fair to compare my runs, where ten to fifteen fowls had some 600 square yards of grass, divided into two yards so as to give change, with a run of an acre for forty fowls; but I think the extra cost of wiring an acre of land for this number of fowls would be more adverse to the balance sheet than the fact of the run being somewhat restricted.

To prove that fowls pay under proper conditions is easy. They paid sixty years ago, when corn was one-third to twice the present price, and eggs just about one-third cheaper; and if it can be shown that eggs were produced at a profit under those conditions, we need scarcely go further. I have many a time heard my father state that for years when he was a boy he kept himself entirely with the produce of his poultry, and would accept no pocket money, or even journey money, unless every penny were accounted for, so that he might prove the fact. He had some six or seven flocks of fowls, housed in brick hen roosts, and scattered all over the parish on grass orchard land, about 100 acres; each orchard had a cottage attached to it for protection, and the women at these cottages fed his fowls and collected the eggs at 2d. per score; the corn he paid for, and only used the best quality. How much he received he never told his boys, probably fearing they might demand an increase of pocket money; nor did he know the amount of tax the eggs had to pay to the collectors before they reached him. The fowls he kept were pure-bred Gold and Silver Pencil Hamburgs, and a few Cochins for mothers.

Coming down to later days and my own experience. For some years my wife kept fowls, having a flock of from forty to sixty about the buildings, and having a 6-acre grass field to run in. Beyond a few scraps from the kitchen (and with pigs kept these do not amount to anything serious) the fowls have no possibility of obtaining any artificial food gratis, the only stacks near being of hay; and under these conditions, paying for all food, she supplied the house with eggs for nothing and made a yearly profit of from £8 to £12. I need not say that the eggs eaten much more than paid for the time expended by a man in feeding and cleaning out the hen house.

Into the details of our failure when we attempted the multiplication of profits I need not go, it has been hinted at above, and my only reason for penning these lines is to prevent others being led away by the same fallacy.—A. H. PEARSON, *Manor House, Chilwell, Notts.*

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1898. January.	Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In Sun	On Grass		
	inchs.	deg.	deg.		deg.	deg.	deg.	deg.	inchs.		
Sunday	2	29.655	42.1	42.0	W.	42.0	44.8	41.0	55.3	37.4	—
Monday	3	30.246	37.1	37.1	Calm.	40.4	42.6	32.6	45.8	28.7	—
Tuesday	4	30.271	37.2	37.2	W.	39.2	48.7	32.8	49.7	28.4	0.090
Wednesday ..	5	29.998	48.9	48.4	S. W.	41.0	52.9	37.9	53.8	37.4	0.295
Thursday ..	6	29.943	52.6	51.3	W.	43.9	53.4	48.4	67.3	45.9	0.104
Friday	7	29.991	46.8	45.3	N. W.	44.3	47.1	46.2	69.6	42.4	—
Saturday....	8	30.079	39.1	38.4	S.	41.6	45.7	31.1	49.8	27.2	—
		30.026	43.4	42.8		41.8	47.9	38.6	55.9	35.3	0.489

2nd.—Rainy early; bright sun from 11 A.M. to sunset; fog at night.

3rd.—Fog nearly all day, but a little sun about 2 P.M.

4th.—Dull and humid throughout.

5th.—Almost incessant rain from 5 A.M. to 4 P.M., and showers after.

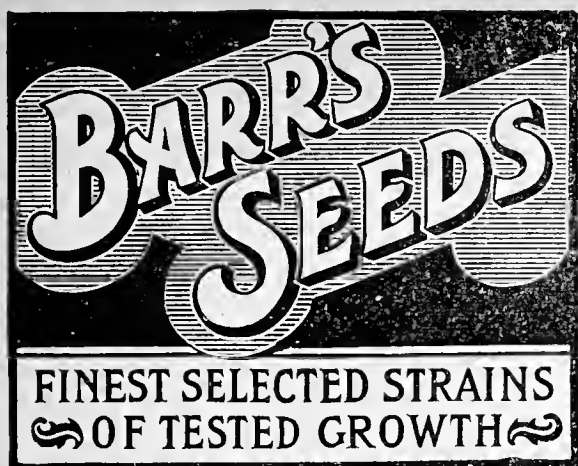
6th.—Mild, with much bright sunshine after 10.45 A.M.

7th.—Rain from 2.30 to 5 A.M.; bright sunshine almost all day.

8th.—Fair, with gleams of sun.

Temperature much the same as in the previous week, and unseasonably high.

—G. J. SYMONS.



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Journal of Horticulture.

THURSDAY, JANUARY 20, 1898.

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DIGGING AND TRENCHING.

SPRING V. WINTER.

THERE has recently been some discussion on the benefits derived from digging or trenching ground for vegetable culture in autumn or early winter as compared with the effects of the same operations when performed in spring. I believe the chief reasons in favour of doing the work in winter is the idea that work is forwarded and the more complete disintegration of the soil effected by frosts, and thus rendering the staple more suitable for the operations of cropping in spring. After a long and varied experience, my conviction is that the season to be recommended for this work, in order to realise the object named, depends entirely on the nature of the soil and subsoil, as well as the rainfall of the district.

Given a heavy tenacious soil and a great rainfall, my experience leads me to recommend delay of the work till spring. Under such circumstances I have never found that winter digging resulted in anything but unsatisfactory results; nor do I think that the advancement of work is gained by it to any significant degree, or that the teachings of natural philosophy can be set aside in this case any more than in any other—namely, that a loose porous body of material holds more water than one that is more solid and compact; and the idea that frost finds its way more easily and into a greater depth in loose soil than it does into such as is more compressed is just as far off the mark as to say that a sponge that is in a state of compression has the same power of holding water as it has when in a state of expansion, or that a linen fabric prevents the radiation of heat as effectually as a woollen one. The laws that regulate these things are inexorable, and act powerfully in producing results that tell against the recommendation of the winter tillage of heavy soils in wet districts.

"Circumstances alter cases." When an under gardener at Carstairs House, in 1838, I learned to practise autumn digging and trenching. The soil of this garden was what is known as light and sandy, and never held moisture in suspension at

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any season to an extent that rendered it otherwise than in a fit state for seeding and planting, and could be turned over with the spade to any desired depth any day in the year with good results. On moving from this garden to go under the late Mr. Turnbull, at Bothwell Castle, where general gardening at that time was in the foremost rank, and I may say vegetable culture specially so, I was rather surprised at first that autumn or winter tillage was never thought of. The soil was a heavy tenacious one, and the rainfall very considerable. All other work was vigorously pushed on in winter, and the digging, but mostly trenching, was not commenced till spring. Under this order of matters I do not think the work was materially, if at all, retarded. Beyond all doubt under this system, which was the result of the observation of a very shrewd and energetic man, the ground was always found in far better condition in spring for the operations of the spade and general cropping. In my own practice, as a head gardener for fifty years, and in two instances having to do with large gardens of soil inclining to clay, my experience has been the same.

The idea that the pulverising influence of frosts extends more deeply into loose soil is a fallacy that I had a striking example of in a winter when there was an unbroken frost of fourteen weeks, with very little snow on the ground. In trenching a quarter of heavy soil in spring, lumps of frozen soil were thrown up on to the surface from a depth of quite 2 feet, while some ground that had been broken up before the commencement of the frost, the frost had not penetrated nearly so deep. I have invariably found that such ground, if turned over in autumn, has been far longer in drying and becoming amenable to the action of garden tools and more difficult to get ready for seeding and planting than when left in a firm condition till spring.

The principles and laws involved in this case are precisely the same as those which have taught the farmer not to plough heavy land from which Turnips have been removed—and which he calls “red land”—in wet weather, but makes him shift his ploughs to firm grass land, or what is termed “lee” in Scotland, that can be turned over in a condition in which it holds less water in suspension than “loose” land does. I believe that all who have cultivated heavy weald land have experience that would corroborate these observations. Such experience is exactly what anyone with some knowledge of natural philosophy, or the laws that govern matter, might expect to realise without much experience.

I have said that loose soil holds more water in suspension than the same soil can hold when in a more compressed condition. Its very looseness prevents the more rapid evaporation of the water, on the same principle that surface stirring in warm weather conserves the moisture for the use of the plant in warm summers. Hence winter trenching delays the drying of the tillage in spring. The power of this same law prevents the radiation of heat, and consequently prevents the more rapid entrance of frosty air into the depths of the soil, just the same as an iron bar conducts heat more rapidly than a wooden one. Hence, by leaving the ground untrenched till spring, the beneficial effects of frost to a greater depth is the result, as compared with the opposite practice.

If these few remarks on this, if somewhat simple yet important subject, will lead some of my younger brethren who have not yet, to some extent, studied the domain of natural philosophy in so far as it bears on our gardening, they will not be in vain. A knowledge of these laws will open up a new world—so to speak—to them, and one that will throw great light on the rights and wrongs, the whys and wherefores, of their everyday work, and will be to them a source of the deepest interest.

If I may go a little further, there is a volume I would recommend them to get and study—namely, “The Infinitely Great and the Infinitely Little.” It would be an eye-opener to many of your numerous young readers, and would help to lead them to see that a life that is worth living does not depend on “bread alone,” and would teach them much of the mysterious splendour (if I may be allowed the term) of Nature. The garden affords peculiar opportunities for such a rich enjoyment, and which may issue in most instructive results.—D. THOMSON.

THE FIRST OF THE FLOWERS.

IN one of his last essays, “The Hours of Spring,” Richard Jefferies speaks of the “Sweet Briar wind” which brought with it the breaking up of a long hard frost and the advent of the growth of spring. Clouded over, as his words seem by ill-health and an unavailing longing to be once more amid the sights and sounds of the open air, they do us good at these times. We see our lost Nature-lover at the window-pane, looking out upon the frozen earth and the war of snow and wind. We see him with his weary eyes once more lit up with hope and joy as they drink in the signs of the coming of spring, and his ears are filled with the songs of the feathered minstrels. We can enter into the spirit of his mood, even if we cannot hope to attain to his knowledge of Nature’s ways or his mastery of the English tongue, which touches and uplifts us as we read.

No “Sweet Briar wind” is it to-day which comes from the south-west, but one fierce and rain-laden, like so many we have had this winter. No brightness does it bring, but, instead, fog and flying rain, with dull grey skies. Yesterday the wind was high, and brought with it clearer skies and long-wished-for sunshine. Pleasant was it to see the sun glinting on sea and mountain. Pleasant was it to be in the garden to observe the promise of spring. Faint and sickly as was the sun, and though the clouds hung heavily over the mountain top, it gave us cheer while it lasted, and lit up the few flowers of the time. Not a Crocus could open, so feeble were the rays, but their tiny cones were brightened as we looked vainly for the outspreading of their segments.

The Winter Jasmine was lit up, too, and a few Snowdrops spread out their petals as if to invite to sip from their treasures any adventurous bee which might dare the season’s frowns in search of food. But not one came, and these and other flowers too soon felt the coming of the storm. Mayhap they saw, as we did, the clouds flying from the south-west, and when the moon uprose the lurid colours which shone round her disc. Who knows? Too long have they suffered from storm and rain this season, and many, like the pale Primrose, have been “born to die unmarried,” and have fallen a prey to the combined forces of rain and wind. The garden is not cheering when it is sodden with rain, when planting is worse than vain, and when everything is a-drip and dreary. It is not, however, our aim nor desire to linger longer over the discomforts of the time, but even among the clouds, as Jefferies did, to seek to find the silver and the gold which will bring cheer while we await the happier spring.

The maiden Snowdrop has not been in haste this winter. Fashioned, as some of the poets have loved to fancy, from the snow, and bearing its name, there has been but little of its native element to give it birth. So might the poet say, but the gardener is more prosaic, and would ascribe its dallying to another cause. But it is not yet late for the “Fair Maids of February” of the olden time—not late for the flower of the Feast of the Purification—the Snowdrop known to Parkinson and Gerard or other old time gardeners. Its time is yet to come, and we speak now of others which are wont to come before the last month of the year has begun, or those which, at times, droop their heads ere New Year’s Day.

These are late, delayed mayhap by the cold summer and the dull rainy autumn and winter days. Thus the little *Galanthus octobrensis*—a small and delicate-looking flower—has not, at the beginning of the second week of January, been fully open, although it has drooped its flowers for a week or so. The earliest Snowdrop has been *Galanthus Elsä*, originally collected by Professor Mahaffy on Mount Athos, in Greece. This was in bloom in the last days of December, and is still in flower. It must be said that *G. Elsä* is not so laggard in its ways this season as *G. octobrensis*. Again we have been disappointed in not seeing the flower of *G. Rachelæ*, another of Professor Mahaffy’s finds, and, like *G. Elsä*, named after one of his daughters. It is of more delicate constitution than the latter, but would have flowered last winter as well as this had it not been that the slugs robbed it of its petals when the flower was just above the ground, while they leave the other alone although close by. These garden pests seem to prefer the flower from Mount Hymettus, famed for its honey, rather than that from the sister height of Athos. From Shepton Mallet our leader among Snowdrop lovers—Mr. James Allen—has sent an early flowering selection from *G. byzantinus*, collected near Broussa. The season in Somerset has been more favourable than here, and flowers are consequently more advanced. My Snowdrops, received from Broussa the same year as those of Mr. Allen, are coming forward quickly now, but this selected variety is likely to be in bloom early in December in most seasons.

There are many stray Snowdrops showing their snowy segments through their green envelopment; some of these are varieties of *G. Elwesii*, but in other seasons the opening day of the year has at times shown us these in full flower. Welcome ever is the little Winter Aconite, with its golden head and Elizabethan ruff below. For days we looked in vain for the appearing of its flowers above the black wet soil, so when the first bloom, with its encircling ruff of

green, came fully into flower its welcome was a joyous one. Simple, cheap, easily grown as is the unpretending little *Eranthis hyemalis*, it is ever a gladness-giving guest, bringing with it not only its own unassuming beauty, but the promise of gayer flowers. It grows in several places, and among others a shady corner is brightened by its presence now, and when it has gone to rest the drooping white bells of the Lily of the Valley shall come to take its place. They are mingled together, and light up a darksome place in their own appointed times.

Few flowers love the sun more than do the Crocuses. The Dutch varieties have long been astir, and there are many clumps with points reared above the soil, like miniature but tender *chevaux de frise*. A harsh simile it may be; but, as yet, if you pass the hand over them they are firm and hard to the touch, even though the flowers begin to appear in little points—colourless as yet, but by-and-by to be bright as the time in which they flower. How we rejoice as we see them open to the sun! Even now, closed though they are, the heart is joyous at the thought of the future time.

But the Crocus lover is not content to wait for the great flowers from the land of canals and dykes, the land of Hyacinths and Tulips, and the array of other bulbous flowers, with which we are delighted. He must have more of the wealth of the Crocus than this, and goes farther a-field for many of the objects of his admiration. We may thus have now not only the hope of the future, but the enjoyment of the present, lessened though it is by cloud and storm and rain. One bright day among many dull ones may suffice to give us a glimpse of the gold of *Crocus vitellinus*, or of *Crocus ancyrensis*, both of which have waited awhile. Is there not, too, a bud or two on the few plants of the rare *Crocus Crewei*? A day of sunshine would open these, and reward us for weary days of waiting. Ah! the compensations gardening has. Disappointments are many, but at times they are lost and forgotten in the more than realisation of our brightest hopes. Fox's Winter Crocus (*C. hyemalis* var. *Foxi*), drenched, soaked, and disfigured, has given up the struggle for the year, but we hope to have a recompense when our eyes rest for the first time upon *C. Crewei*, of which we may have to tell again.

The white winter-flowering Heath—*Erica carnea alba*—is wreathed with its flowers. The pink variety or type (which you please to call it) is also coming into flower, though paler yet than it shall be later on. There are stray flowers on *Arabis* and *Aubrietia*; Marigolds, too, give us a touch of orange colour, but a frosty night or two cut off some Wallflowers then in bloom. There are some Hellebores and some Primroses, and it would not be difficult to find a bloom on some of the early Cyclamens, and a more careful search would reveal a few other flowers which, despite the uncongenial time, are in flower. Iris Bakeriana, one of our most delightful winter flowers, has been in bloom since before Christmas Day, and the queen of summer—the Rose—seeks to extend her reign over winter as well, for has she not given us still some pink China Roses—a flower of Longworth Rambler and one of Reine Marie Henriette, the last being deprived of a petal or two by the wind to-day?

Our tale of the time is done. It is a mingled one of joy and pain, as becomes that of the birth of the flowers. The pain is present, but the joy and the hope almost overwhelm it by their magic power.—S. ARNOTT.

EARLY STRUGGLES FOR KNOWLEDGE.

(Continued from page 4.)

THE method adopted in my studies of practical horticulture was to take up each department in turn, obtain the best books available, and work it out thoroughly; but any special work often led me into extensive researches, as an instance will show. One of the first gardening books I ever read was Wheatley's *Observations on Modern Gardening*, published in 1771. This work is scarcely known to gardeners of the present day; but I formed a high estimation of it, and it was long after when I found that Loudon had pronounced it to be "the grand fundamental and standard work on English gardening." It was partly due to this, and partly to the employment in laying out gardens, which led me to seek for the opinions of the best writers on the principles of taste, and in the pursuit at various times I bought and studied the following works:—*Analytical Inquiry into the Principles of Taste*, by Richard Payne Knight, who was brother of the celebrated President of the Royal Horticultural Society; *Essay on the Picturesque*, by Uvedale Price; *Essay on the Sublime and Beautiful*, by Burke; Gilpin's *Remarks on Forest Scenery*; Fosbrooke's *Epitome of Gilpin's Principles of the Picturesque*, and Mason's *Essay on Design in Gardening*.

Then on the practical side I worked at Kemp's *How to Lay Out a Garden*, and Smith's *Parks and Pleasure Grounds*, both useful books, and to these must be added Loudon's elaborate works. The course of study described first awakened a love of trees, and not only induced me to study them at the time, but it has been my pleasure also during the past twenty years. Loudon's *Encyclopædia of Trees and Shrubs* and

Brown's *Forester* were the two books I found (and still find) the most useful, but these were not procured until near the end of my probation, when I was able to devote a little more money to the purchase of books. Loudon's *Instruction for Young Gardeners* proved valuable in the early stages, and my attention was led in various directions by that work, but chiefly towards geometry, drawing, and land surveying. On the former I procured a cheap text-book and a second-hand copy of Simson's *Euclid*, and on the latter I was delighted to pick up at a stall one day a copy of Crocker's *Elements of Land Surveying*, which removed many difficulties.

As regards the principles upon which general gardening is founded, Lindley's *Theory of Horticulture* assisted greatly in a comprehension of the various practices, and another little work, *The Science and Practice of Gardening*, by G. W. Johnson, founder of the *Cottage Gardener* and co-Editor with Dr. Hogg for many years of the *Journal of Horticulture*, was studied with benefit.

In reference to special departments of gardening, fruit culture received considerable attention, for my work was largely concerned with it. The two first works I bought were Rivers' *Miniature Fruit Garden*, and the second edition of Dr. Hogg's *Fruit Manual*, which though a small volume was a very useful little book, presenting a marked contrast in size with the last edition of this celebrated cyclopædia of fruits. This was followed by William Thomson's *Practical Treatise on the Cultivation of the Grape Vine*, and David Thomson's *Fruit Culture under Glass*. From that time I bought and read many works of the older writers on fruit, quite a library in themselves, and these were followed in later years by all the best of the modern works that could be afforded. Kitchen gardening, stove and greenhouse plants, Ferns and Orchids were studied in a similar way, but need not be particularised, as sufficient has been enumerated to show the course taken. It should, however, be added that the horticultural journals were an important source of information, but for a considerable time I did not see them regularly; in the latter part of the period described I had the good fortune to see one every week, and sometimes more, and it would be difficult to estimate the advantages to be derived by gardeners, young and old, from a careful study of the admirably edited gardening periodicals.

A few words must be devoted to my botanical studies, because they greatly increased my attachment to horticulture as a calling. The first work bought is now an historical curiosity, it was entitled *An Introduction to Botany*, and the author was James Lee of The Vineyard, Hammersmith, the founder of the firm, whose name can still be seen near Addison Road Station, Kensington, on the old site, though the original nursery has been absorbed for other purposes. This book was founded upon the writings of Linnaeus, and dedicated by permission to that great naturalist in an admirably worded preface, which would indicate that "James Lee" must have been a fine type of a British horticulturist. The work, I believe, had a large sale, and assisted greatly in popularising the Linnean system. Another old work which came into my hands was *The Elements of Botany*, by Dr. B. S. Barton, which especially attracted attention by its excellent coloured plates of *Sarracenia* and *Dionæa*, but it also contained much useful information. From these I proceeded to Lindley's, Hooker's, Balfour's, Oliver's, and Masters' works; and it is not necessary to trace how my studies were gradually extended until later on I reached Sach's great Text Book. A study was also made of our native plants, and many a holiday journey was made over commons and through woods in search of British plants.

At this time, too, whenever I had a half-day's holiday I visited the parks, public and private gardens within walking distance, took notes of all I saw, and wrote them out, any doubtful matters being made the subject of careful research. A diary was kept of both work and studies, and in reading the majority of useful books I made it a rule to write down as concisely as possible what was remembered of the principles or objects of the various works, thus obtaining valuable exercise in composition.

With regard to my subsequent experience, and advanced studies pursued under more favourable circumstances, it need only be said that they have been entirely devoted to horticulture or cognate subjects, and the knowledge gained I have endeavoured to apply usefully in the service of my employers, and to the benefit of fellow workers. In the sketch of my early labours I have not dwelt upon the many difficulties and discouragements experienced, because it might appear that I wish to exalt my efforts. My struggles were due to an innate desire to gain knowledge, and raise myself in the world by that means. My father's injunction has always been in my mind, "Learn all you can of useful subjects, but learn thoroughly, observe closely, and reflect constantly." Happily my work has not been in vain, for I hold a position which so exactly accords with my taste and inclinations that I envy no man. Apart from this, however, my books and studies have yielded a never-ending pleasure. I am still a student, learning patiently from the great book of Nature, and my only wish is that I may be permitted so to continue to the end.—A WORKING STUDENT.

A DREAM OF THE FUTURE.

CHANGE of air and scene act like magic on both mind and body. Even in the depth of winter how much there is to note in this land of ours as we speed onward behind the "iron horse!" All roads seem to lead to that greatest of cities with its endless piles of bricks and mortar, and when it is reached many seem tempted to linger and enjoy the familiar gaieties which at all times prevail in the great metropolis. To me it often seems a place to avoid, or at least to leave as soon as possible, and pass onward to that fruitful garden beyond—the fair land of Kent. Towards that goal I journeyed—somewhat slowly—last Christmas Eve, and a few days spent in walking and driving about the fruit-growing districts of the Hop county supplied me with much food for after reflection, as well as ample work for the perceptive faculties during my stay there. In the matter of fruit-growing the Kentish folk have been "going ahead" during the last ten years. So much planting has been done that the whole district seems destined to become one vast fruit garden. The system of culture followed is, I noticed, improving all round, and the young plantations, just entering upon their prime, looked promising indeed for another season. Beside them the old orchards, with their stunted growth and gnarled or broken branches, cut a sorry figure. They have done their duty in the past, but cannot be expected to produce fruit of high quality when decay is already beginning in their trunks.

I left the land of sunshine to journey toward the mists which too often enshroud the Midlands, and on the way my thoughts dwelt continuously upon the progress I had noted. I think, indeed, that my sluggish imagination was stimulated at the prospects before us in this thickly populated island. When home was reached at last and sleep sought in the usual way, the mind for once gained the mastery over the tired body, the brain was active to work, to plan, but felt not the need of sleep. When this did come at last it was only to carry me to the "land of dreams," where I appeared to see a vision of the future, which I will attempt to set down, for who can tell whether or not that vision may contain some germ of prophetic truth?

I seemed to see all England at a glance; but what a change to England as we know it now! A network of railways permeated the whole country, the great towns seemed to have grown little, but a vast number of others of moderate size had sprung up with wonderful regularity throughout the country. It was summer time. The meadows, as of old, with their deep green verdure were in evidence on all sides, for the milk trade of the country had grown to enormous dimensions, light railways passed through every village, and milk was conveyed two or three times daily to surrounding towns, where a wonderful and complete system of distribution was in force. The farmers themselves seemed shrewd business men, with a prosperous look about them, being happy and contented. I seemed to miss the corn fields, but soon perceived they were things of the past, for farming was confined to the production of milk, butter, meat, and food for cattle.

The other tracts of cultivated land seemed like a series of huge gardens, which produced wonderful crops of fruit and vegetables. On all sides work was abundant, and method, industry, and science seemed as if by magic to convert every concern into a paying one. The growth and disposal of fruit appeared to have become one of the greatest of rural industries, and those pessimists of olden times who used to declare that fruit could never be largely grown in England, and that much of the land would go out of cultivation, were quite forgotten; while those strong men who, at a critical time, lost no opportunity of working and striving with all their strength to encourage extensive fruit growing on scientific principles, were looked upon as prophets of old, whose names were remembered for the good they wrought for their country—for their bloodless victories.

Then I seemed instinctively to realise what great advance had been made in the system of distribution, as well as in methods of culture. The immense advantage of combination had evidently been fully grasped. A National Society of Fruit Growers had come into existence, which society had agents for the sale of fruit in every town in Britain. To these the growers sent their produce, and after paying commission, received the full return. Telephonic communication prevented any particular town from being "glutted" while others were in want, because information about the state of the markets was constantly exchanged between every district, and the wonderful increase of speed on all railways, combined with the use of trucks fitted with cool chambers, reduced the effects of a journey of a few hundred miles to a mere trifle. Mechanical appliances having entirely done away with the necessity of manual labour, fruit as an article of food had become an absolute necessity for all classes, and consequently fruit growing was a real and important national industry. Instead of relying on America and our colonies for Apples to the same extent as now, we had enough of our own, besides exporting jam in enormous quantities, thanks to the cheapness of

sugar in England and to the natural adaptability of our sea-girt isle to the production of fruit.

The business appeared to be managed in this way. The National Society of Fruit Growers had established one or more jam factories in every fruit growing county, and whenever the ripe fruit exceeded the demand of the moment, telephonic communication directed the surplus to be sent to those factories to be utilised. Thus waste was prevented, and what at one time used to be a loss was turned into profit. The British race being a severely practical one, brought in the aid of science to improve their methods, both in regard to economy of manufacture and quality of the manufactured article, till English jams became famous throughout the world for their unequalled excellence.

Hybridists, too, seemed to have kept pace with the times, for varieties of Apples and Pears, specially adapted for growing in the climate of Britain, had been raised. I marvelled in my dream at the great size and wonderful brilliancy of colour they all possessed, the one point the foreign supplies used to beat them in. Perhaps, too, the climate had improved in consequence of the re-timbering of the land with fruit trees. It seemed at least to be so, judging by the style of dress I noticed, and the vivacity of the people, which appeared akin to that of dwellers in sunny lands. The wand of the magician had, I thought, indeed been waved over England with marvellous results, for the bright alertness, fine physique, and happy faces of those who seemed to pass before me with vivid clearness, could only be found in a land where peace and plenty dwelt. I seemed to glow with pleasure at the thought; then I awoke with a start, and lo! it was "only a dream."—ONWARD.

[Our friend is not only a good dreamer but a good worker, and if all in possession of land could turn it to account as well as he has done there would soon be a quick march "onward" towards the realisation of his ideal.]

NOTES ON VINE BORDERS.

WHILE I was reading the common-sense remarks, of "Vitis" (page 617, December 30th, 1887) on Vine borders, it occurred to me that if practical Grape-growers recorded their own failures, or what they have observed by the sudden collapse of Vines in borders which have been formed with care and the greatest of skill exercised in the formation of them, it would be as instructive to the inexperienced beginner as lengthy chapters on orthodox methods of preparing the soil and manipulation of border-making. There are often local circumstances which have to be considered in reference to this subject which are unknown in other localities, and may necessitate a complete change of action in placing drainage and soil for the roots to ramify in safety.

It is seldom one can work with success on identical lines in positions diversely situated. In low and damp-lying ground, where drainage is formed under difficulty, precaution is necessary to keep the roots from passing downwards where they would likely perish, while in elevated positions precautions have to be taken to prevent the evils which accrue from drought. I know where there are Vines in the south of England which produce excellent Grapes year after year, and are recorded to be about a hundred years old, and where the roots have gone in search of food no one could correctly state. I have also within my ken in the same latitude the failure of Vines by shanking of the Grapes where borders were formed elaborately, with all one could suppose to insure the best results; but the roots ran through the excellent soil into cold, wet, and inert clay beyond, and speedily brought failure and great disappointment. If the border had been limited and means adopted to prevent the roots from wandering I believe success would have been complete.

Many cases of this kind I could relate, but will not at present make claim on your valuable space further than record an episode relevant to keeping Vine roots within bounds—viz., an Alicante Vine, which had for thirteen years produced excellent crops of Grapes; but two years ago gross growth developed—the berries were larger but badly flavoured, and would not keep, as they had always done, till April. During the past season no improvement took place. We went in search of the mischief by digging down by the side of the wall which enclosed the border, and found the delinquent roots had pushed their way down by the side of the wall till they reached cold wet unhealthy clay. They were in abundance, and no doubt had been drawing up moisture with nothing in it, or worse, which rendered the fruit so obnoxious. All the roots had to be severed, and bricks built to prevent further egress.

All the Apple trees here have been placed on foundations of bricks to prevent downward growth, and canker has ceased. There have been abundant crops for over a dozen years; old and young trees alike respond favourably to the good practice of keeping the feeders under complete control.—M. T., Carron, N.B.



LÆLIA ANCEPS MRS. DE BARRI CRAWSHAY.

THE number of varieties of *Lælia anceps* is very considerable, and several of them are of more than ordinary merit. So useful and so beautiful is this Orchid, however, that there is plenty of room for more provided they are equal or superior in quality to those already known and appreciated. One of the latest additions, and at the same time one of the handsomest, is *L. a.* Mrs. de Barri Crawshay, which was exhibited at the Royal Horticultural Society's Show at the Drill Hall on December 14th by de Barri Crawshay, Esq., Sevenoaks. On this date the Orchid Committee recommended an award of merit, and there can be no doubt the honour was deserved. As may be seen by reference to the woodcut (fig. 9), the form of the flower is very fine, and it need scarcely be said that in size and substance it lacked little of being perfect. The sepals and petals are very rich purplish rose, while the front lobe of the lip is deep velvety purplish crimson. The throat has veins of bright crimson on a pale yellow ground. It is a decided acquisition, and was very greatly admired on the day of exhibition.

POTTING ORCHIDS.

SUCCESS in Orchid growing largely depends upon atmospheric conditions, proper grouping as to temperature, and other details, but unless they are properly potted in the first instance the usefulness of these is to a certain extent negatived. Potting, as I here use the term, has a very wide significance; it means providing a root hold for plants of very different habits, with many types of roots, and from many different countries. Before commencing, then, to provide a new rooting medium for a varied collection, a little thought must be given to the style of root and the class of material they are most likely to thrive in.

First there is the large fleshy root of the majority of distichous-leaved plants, as the *Vanda*, *Aërides*, *Angræcum*, and *Saccolabium* species. The majority of these show a great partiality for peat, but much prefer the elastic light sphagnum moss of our shady copses and woods. It is naturally a bog plant, but grows often on the banks of streams, and the quality from such positions is always superior to any found over deeper water, or rather mud. It should be used fresh and in a living state, picked free of all foreign substances, as weeds, decayed leaves, sticks, and other refuse. The neglect of this often leads to the introduction of fungus and other ills that give considerable trouble afterwards. For the majority of kinds charcoal or clean crocks should be added or mixed with the moss as potting proceeds.

The depth of moss required by various kinds is only to be judged by experience of the size and quality of the roots, but in all cases it is safer to be on the side of thinness rather than otherwise. Such large growing, vigorous looking kinds as *Aërides obovatum*, *Angræcum eburneum*, *Saccolabium Blumei*, or *Vanda suavis* will push through a thickness that would be fatal to *Aërides roseum*, *Angræcum modestum*, *Saccolabium bellinum*, or *Vanda cœrulescens*. Then, according to the habit of these, some do best in large pots, others again prefer baskets, while many of the least growers are best suited in the small pans so much used now for suspending.

Without detailing the kinds suitable for each mode a hint or two on carrying out the work may be useful. The large kinds should have the roots spread out as far as possible, and all air roots must be brought under the influence of the compost. By this I do not mean that those outside the pot should be broken and snapped about in order to get them inside, this checking the plants in every case, and often

killing the individual roots. When the plants are unhealthy through any cause this should be easily found at potting time. Some of the taller growers show a disposition to give way at the base of the stem, and this may be got over by cutting the end off to where it is sound. This plan is often resorted to when plants lose the lower leaves, the shortening of the stems allowing them to be set lower in the pots.

Basket plants require much care in handling, as in most cases the roots will be found to have taken hold of the bars which they twine around and are difficult to remove. The old basket must be taken to pieces by drawing out the corner wires and sawing the rods through at convenient intervals. These, with the roots clinging, may sometimes be placed entire in the new baskets, but it is not well to overdo this, as wood buried in sphagnum often produces a troublesome white fungus difficult to get rid of. Any decaying roots may be



FIG. 9.—*LÆLIA ANCEPS* MRS. DE BARRI CRAWSHAY.

taken off, this being necessary with any and every kind of Orchid. Those liking small pans require the most care, as there is not the same chance of fixing them as where the receptacles are larger.

Put the drainage in the pans ready, and then break the old one if the plant does not slip out easily. Although the roots may not be very plentiful outside, there are plenty, as a rule, clinging to the inside, and if any force is used these are bound to be torn as the plant comes out. Orchid roots may sometimes be loosened by soaking with water as hot as it is safe to use it, but this applies more to long straight ones on the outside of pots or on the stage than to smaller ones coiled around the insides of pots or pans. It will be found, as a rule, the larger the roots are, the rougher and deeper the compost required, those having smaller less fleshy ones being best suited in a shallower less divided medium.

In the latter category may be mentioned the deciduous section of Dendrobiums, Oncidium tigrinum, and others, many of the New Grenadan Odontoglossums, Masdevallias, and, in fact, the majority of pseudo-bulbous Orchids. But in most cases these will differ from the last mentioned in that they nearly all like a good per-centage of fibry peat mixed with the sphagnum moss. This must be cut some time in advance, well dried, and all earth and sand shaken or beaten out of it. The largest of the bracken roots must also be taken out, as they grow freely in the moist heat of the Orchid house. Orchids that like a proportion of loam as well as the above ingredients are many, and include the majority of Cymbidiums, Sobralias, Lycastes, and a few Zygopetalums.

These, as a rule, like large roomy pots, good drainage, and a very rough open compost. Lycastes, it is true, do with less room than the others, so do Anguloas, but the quality of the compost does not differ materially in any. In addition to those already mentioned there are Orchids naturally terrestrial, as many of the Indian Cypripediums, others that are naturally epiphytal, or partly so, but thrive under cultivation in a terrestrial compost. Pleiones, Thunias, Calanthes all belong to the latter, and should be potted in peat, loam, and chopped moss in varied proportions, according to the liking of the individual kinds. Some of these have recently been treated on in these pages, and others will as occasion arises.—H. R. R.

SIMILARITY OF LIFE IN THE VEGETABLE AND ANIMAL KINGDOMS.

(Continued from page 26.)

LIFE IN THE WATERY ELEMENT.

AQUATIC plants, marine or fresh water, appear to occupy the same relative position as the countless forms of animal life existing under similar conditions. Here may be remarked plants which pass a submerged existence, and others—the Nymphæas, for instance—which, like the Amphibia, seek for air at the surface. With these the resting period is, of course, one of total submergence; but we have again a connecting link between aquatic and terrestrial plant life in those members of it which, perforce of circumstances, rest during normal periods of drought. This is in no way remarkable, only inasmuch as is to be found a kind of mimicry by animals possessed of voluntary motion (which all are not) in a lively degree.

A notable example is that of a certain species of fish which pass a period of suspended animation imbedded in the hard-baked mud of a river bed until awakened by a return of the normal element. The cause of this, however, may be easier to trace than in the case of the alligator, an example of which is detailed by Humboldt, who speaks of a Spanish gentleman, one who had entertained him during his South American travels, having witnessed an extraordinary scene. He and a companion, whilst sleeping in a temporary building erected on the bank of a river which had been unconsciously built over a buried specimen of the obnoxious saurian, were rudely awakened in the night by its struggles for freedom, which eventually having obtained, it snapped viciously at a dog as it decamped to the river.

With terrestrial plants, as with terrestrial animals, death by drowning can take place in a comparatively limited period, many when submerged for a certain time becoming blackened and decomposed. This I have experienced with Chrysanthemum cuttings totally submerged in a tank from twenty-four to forty-eight hours, when death has resulted, they having, in fact, been asphyxiated. In spite of this, it appears quite reasonable to suppose that both plants and animals are prompted by Nature to make more or less effort to accommodate themselves to circumstances foreign to what may be regarded as an essential condition of life. An interesting experiment was made by Mr. Burbidge with a plant of Pistia stratiotes in the College Botanic Gardens, Dublin. This when potted and treated as a terrestrial plant showed under these abnormal conditions a considerable reduction of the bladder-like construction, and every appearance of this part becoming metamorphosed into woody stems.

Evolution in both kingdoms is acknowledged to be distinctly traceable in fossil remains, which, like steps in a ladder, bring us up to, not the highest possible, but practically the best possible, to the particular age. This may be termed natural accommodation, or better still, perhaps, adaptability to the circumstances of life. Darwin, in his attempts to fathom the vast abyss of ages, concluded, one might rightly infer, I think, that he, at least in his own opinion, had unravelled the two strands of life till they were no longer divisible, and but one unit of creative force remained to represent a common origin. However we may regard this, or whether from the depths of primeval shadow it is too obscure for present purposes to be regarded at all, the dual aspect of life in the watery element presents in the lower forms of each a similar mysterious convergence.

The Greek designation, Zoophyte, signifying animal-plant, illus-

trates this, and going even further into the very abyss of obscure life contemporaneously existing we find in Dr. Wright's edition of "The Ocean World," by Louis Figuier, the question asked anent the Protozoa (literally first animal). "Has the Protozoon sentiment, feeling, perception? Has it consciousness, sense, sensibility? . . . do they know what takes place at the three-thousandth part of an inch from their microscopic bodies? To the Creator alone does the knowledge of this mystery belong." The similarity of life in the two kingdoms under this phase may, I think, be admitted, but more pertinent things claim our attention.

SIMILARITY IN SUSCEPTIBILITY.

Apart from sensibility brief attention may be given to the susceptibility of plants to injury from causes similarly affecting animal life. The action of various poisons exemplifies this in a remarkable degree. Dr. Lindley treats of this very conclusively in his "Introduction to Botany," commencing this particular study by saying, "The vitality of plants seems to depend upon the existence of an irritability which, although far inferior to that of animals, is, nevertheless, of an analogous character." The late doctor seemed to be perfectly in accord with the opinion of M. Marcet derived from a series of experiments, who arrived at the conclusion that "metallic poisons act upon vegetables nearly as they do upon animals; they appear to be absorbed and carried into different parts of a plant, altering and destroying the vessels by corrosive power." Also "That vegetable poisons, especially those that have been proved to destroy animals by their action upon the nervous system, also cause the death of plants, whence it is inferred that there exists in the latter a system of organs which is affected by poisons, nearly as the nervous system of animals." These results were confirmed by the further experiments of Macaire, the importance of which is duly recognised by Dr. Lindley.

Were anything wanting here to further establish the identity of the two kingdoms, so far as this phenomena is concerned, Lindley's practical proofs provide it in the ascertained fact that "those mineral substances, which are innocuous to animals, are harmless to vegetables also." Further, it is adduced that Marcet's observations "proved that narcotic and irritating poisons produce an effect upon vegetables altogether analogous to that which they produce upon animals;" and lastly, in connection with this, "The very valuable experiments with gases by Turner and Christison . . . lead to the same conclusion."

The inherent powers possessed by plants in reparation of injury need scarcely be dwelt upon, but where these natural efforts are afforded aid unexpected results are often obtained. In the case of a noble Beech, which had far up its trunk a large elliptical cavity, and by which, owing to the lodgment of water, its life threatened to be considerably foreshortened, this power of reparation was curiously displayed, and but a few years elapsed after the face of the cavity being closed up with bricks and cement ere the skin, if we may so term it, had entirely closed over the gaping wound, and to all outward appearance our Beech was as sound a specimen as it was grand in its proportions.—INVICTA.

(To be continued.)

CULTURE OF LAPAGERIAS.

THE Lapageria is one of the most useful and ornamental of all greenhouse climbers, and may be as easily and successfully cultivated by the amateur as the professional gardener in town or country. That it will succeed well in smoky town gardens I have had abundant proof from numerous healthy specimens I am familiar with growing in some of the blackest parts of smoky London. Anyone having a greenhouse containing hot-water pipes sufficient to keep out frost during the winter months may with confidence enter upon the cultivation of this beautiful plant. From April until November no artificial heat whatever is required, and from November to April no more than is sufficient to exclude from the house the two great enemies to plant growth during winter—viz., damp and frost.

I have studied the plant and its requirements closely for a great number of years, and have witnessed many cases of success, and also many failures in its cultivation; and almost invariably I have found that the main cause of the latter was that the roots of the plant had been kept too cold and wet during winter. During summer the plant, if healthy, forms abundance of white fleshy roots, in some cases nearly as thick as a pencil, which decay quickly, perish, and almost entirely disappear during winter if the compost in which they are growing becomes wet and cold, and approaches being what is called "sour." The same sort of thing is frequently experienced by Grape growers, when the roots of the Vine have mostly found their way to the bottom of the border, and the same is cold and wet.

What is especially required for the well doing of the plant is that these roots, produced in such profusion during summer, shall be preserved through the winter, and this is most readily done by planting it in such a position that they may be slightly warmed by the hot-

water pipes, which should be near to, but not in actual contact with, the box or pot in which the plant is growing.

To those about to commence its cultivation I will now endeavour to give, as plainly as I can, particulars as to the system I would recommend, and which I have myself proved to be most thoroughly and remarkably successful. In procuring the plants, which may be purchased at almost any of the large nurseries, I would advise that if possible one each of the two most useful varieties—viz., *L. alba* and *L. rosea superba*, or as it is sometimes called, *L. rubra*, be procured and planted, either together or separately, as is most convenient. In either case the growths should be allowed to intermingle, as the effect when the plants are in bloom is much finer by so doing. Good plants may be procured of either variety at a very reasonable cost. The older form, *L. rosea*, is cheaper than either of those just mentioned, but is very much inferior.

As soon as the plants are procured a permanent position should be selected for them to occupy, and a box or boxes procured to fit such position. A suitable size for boxes is 3 feet long, 1 foot 6 inches wide, and 15 inches deep if for one plant, but the length and breadth may be modified to suit the position at the cultivator's disposal. If two plants are intended to be planted in one box, it will require to be enlarged either in length or in breadth, but preferably in length.

An angle of the house is usually the most suitable position, and the box should then be so fixed that its bottom is 2 to 3 inches above the hot-water pipes; this to be a clear air space between, so that the box is in no way in contact with the pipes. Two inches of crocks, with some lumps of charcoal, must then be placed over the box bottom, in which a number of holes should be bored to allow of the free escape of water. On the top of the crocks 2 inches of drainage should be placed: this may consist of a layer of rough lumpy peat, interspersed with charcoal broken smaller. The box may then be filled up to within 4 inches of the top, with a compost consisting of two parts good fibrous peat, one part turfy loam, and half a part each of rough silver sand or river sand, and charcoal broken small.

The plants should then be turned out of the pots, and most of the old compost broken away, carefully disentangling the roots, and spreading them out over the new materials in the box, covering them afterwards with 1 to 2 inches of the same, pressing it moderately firm to fix the roots, and then giving all a good watering. Wires stretched under the roof at about 8 inches from the glass, and 6 to 8 inches apart, are best for training the young growths upon. They will require frequent attention during the growing season, which is principally from March until the end of July, and during which time and until the end of September too much water can scarcely be given to the roots, if planted and arranged as I have above directed. I give a very liberal supply every day during this period. From October until February I do not give water more than twice, and in dull weather only once, a week.

Frequent syringing of the foliage is not beneficial to the plant, but a thorough washing with the syringe or hose pipe occasionally on a summer evening is of benefit in clearing any dust, dirt, and insect pests. The north end or side of a house, where the direct rays of the midday sun do not strike upon the plant, suits it best, though it is not very particular upon this point, providing it is suited in other respects. Abundance of free ventilation should be given both day and night during hot weather, and above all, never forget in such weather its daily supply of water, to which may be added occasionally, providing the plant is healthy, weak liquid manure.

The most troublesome enemies of the *Lapageria* are the common aphid or green fly, with grey and black snails and slugs. The former appears to be very fond of the young and tender growths, and must be kept down by fumigation. The latter, which eat the young succulent stems as thrown up from the base of the plant, must be carefully watched for and hunted up at night when they are feeding at, say, from nine to ten o'clock. If trace of them is seen during the day it is a good plan to lay down a little dry bran, which seems very attractive to them, and near which they will almost certainly be found if looked for at the time I have stated.

The plant when in good health is a most profuse bloomer, and plants treated as I have above described are during the months of August, September, and October a dense sheet of bloom, and from thence onwards all throughout the winter a continuous supply of flowers, more or less abundant, is produced; indeed, scarcely at any period of the year are the plants entirely without blooms, which we find at all times useful for many different purposes. For the filling of *epèrnes* they are very effective, either cut with foliage and a portion of stem and allowed to droop over the edges, or cut without either foliage or stem, which is usually more convenient, and inserted in the dish heel downwards amongst plenty of *Lycopodium* or *Maidenhair Fern* fronds. They are also very effective in wreaths and crosses, for which purpose we cut them without foliage, and wire each flower separately; also for bouquets and for sprays of flowers for ladies' wear we find them to be much appreciated. In fact, where choice cut flowers are

much in request I do not know any other greenhouse plant equally valuable for so long a period of time.

I have not said anything as to pruning, for the reason that none is required unless the growths become unduly crowded, in which case the weaker ones should be thinned out. Propagation is effected either by seed sown in a gentle heat, or by layering some of the growths in such a manner that the stem and a portion of each leaf is buried in the compost. This, however, is a very slow and, in the case of amateurs, an uncertain business, so that it is best to go to a nurseryman for the plants required.

After the box becomes fairly well filled with roots and the plants are established, a top-dressing annually in April of fresh compost prepared as above, with a slight dash of Beeson's manure added, will be found to benefit the plants. A little of the old surface mould should at the same time be loosened and taken off carefully in such a way as not to damage the roots. In the hot sunny weather of summer I paint the glass on the outside with a coating of "Summer Cloud," which I find to be a very useful shading, and one not readily washed away by slight showers.—K. W.

EARLY PEAS.

THE mildness of the present winter seems likely to give us an exceptionally early spring, and those who have followed the time-honoured practice of sowing a few early Peas in December will, perhaps, make a "lucky hit," unless our treacherous climate once more deceives us during the next two months.

The practice of sowing an early supply in pots, or turves, placed in cool houses or pits, and planting them out in February as soon as the weather is favourable, is without doubt a good one; in fact I know of no other plan by which such early and satisfactory crops can be obtained in the open air. When this plan is adopted the young plants should be protected by means of Spruce branches, or other evergreens, as soon as they are planted in the open air, as our climate is too changeable to trust to chance in such a matter; and if they receive a thorough check through frost they seldom come into bearing much, if any, earlier than plants raised from seed sown in the open air.

Towards the end of January is a capital time in a season like the present one to sow early Peas on a warm border. If the ground has been already dug, I like to sprinkle a coating of newly slaked lime upon the surface, and during a bright day fork the soil over again to help it to dry quickly. If this is done before noon, in a couple of hours the soil will often be dry enough for drawing the drills. In most gardens a warm border is at command for the early crop of Peas, and as such borders are not often of great width the drills can be drawn 3 inches in depth, without scarcely treading upon the border; a matter of considerable importance in early spring.

When Peas have to be sown in heavy land no useful purpose is served by doing so before the soil is fairly dry, for to stir it about while it is "sticky" causes it to become more stubborn still. A little old potting soil, wood ashes, or even leaf soil, placed along the drills, the seed also being covered with the same material, helps greatly to forward growth after germination has taken place, and as early Peas are an important crop in private gardens those who have a stubborn soil to deal with will find this little attention is well repaid.

In regard to the distance apart at which the rows should be placed, a safe rule to follow is to allow as much space between as the height the haulms usually reach. Spinach, Lettuce, or Cauliflower can then be grown between, and one has the satisfaction of knowing that the most is made of the land by such a method of cropping. It is not a good plan to sow early Peas too thinly, as mice and birds often do much damage; on the other hand, it is a mistake to scatter the Peas along the rows thickly enough to touch each other. If placed about an inch apart the distance will be found generally suitable, but strong growing midseason varieties should be allowed double that amount of space.

A pair of very early varieties which it would be hard to beat are Carter's Lightning and Chelsea Gem. Early Eight Weeks is said by some to come into bearing a few days sooner than the two first named sorts, but as I have not grown them side by side I cannot vouch for the accuracy of the statement. Both English Wonder and American Wonder follow Lightning closely. The Sutton's Forcing is a great acquisition, being quite dwarf, and I think one of the very earliest Marrowfat Peas in existence. Our old friend, William Hurst, is also fairly early and a grand cropper, bearing fine pods. Among the taller growing early varieties Sutton's Early Giant, Dicksons' First and Best, and Veitch's Selected Extra Early are each of well-proved excellence.

Both mice and birds are foes which must be looked sharply after.

Coating the Peas in red lead before sowing may in some cases prevent mice from interfering with them, but it does not always do so. The only safe plan is to set traps and catch them. I have tried many plans for keeping birds at bay, and the most effectual one I have yet discovered is to fasten several lines of black cotton over each row, a few inches above the soil. The black cotton seems to answer better than white, as birds do not appear to notice it till their wings became entangled, then they are quickly frightened away. Strips of red cloth tied to sticks or strings a few feet above the soil scare the majority of birds for a time.

As soon as the young Peas are an inch above the ground I like to earth and stake, but I think early crops are not benefited by being mulched, as it helps to keep the soil cool at a time when it often needs warming. Without the mulch the hoe can be kept going close up to the plants, so that the warm air carrying both heat and nitrogen may be forced into the loosened soil, causing the roots to grow apace, and the living organisms (which the lumps on roots contain) to extract the nitrogen, and form it into such compounds as all leguminous plants can absorb.—H. D.

GLOXINIAS.

EARLY sowing of the seeds of Gloxinias will result in securing specimens that will bloom freely the first season. This is a distinct advantage, for the whole of the plants from a sowing may be flowered, retaining the best, and throwing away varieties that are inferior. If the best seed only is obtained there will be few of the latter. Any seedlings, however, which do not flower the first season should be kept growing in a suitable temperature, when they will flower early in spring, and perhaps give blooms of more than ordinary quality, for it is not always the seedlings that grow the quickest that are the best. Hence it is that every seedling should be cultivated to at least the flowering stage, whether that happen the first year or the second.

As the present is a suitable time to sow seeds of Gloxinias, a few details of the operation may be acceptable to those who have at command a temperature of 70° to 75°. A propagating frame in a plant stove is the most suitable position. Hot-water pipes should run under the frame, and moisture may be maintained in it by a good depth of fresh cocoa-nut fibre refuse. Heat and moisture are indispensable to the germination of the seed, as well as to carry on subsequently a steady and progressive growth.

The preparation of the compost and the receptacles for sowing in are important. Six-inch pots or wide shallow pans may be employed. They must be clean and dry, though if new they will be of such a porous character that moisture from the soil will be freely abstracted to the detriment of the seedlings, probably at a critical stage of their existence. To avoid this soak the pots or pans, that have never been used, in water for some hours, and after they are properly dry on the surface, inside and out, they are ready for use. Fill them about one-third with clean potsherds, the largest pieces at the bottom, the smallest on the top, covering the whole with a layer of damp sphagnum moss or fibre from the compost.

Fibrous peat and leaf soil in equal parts, with a little loam, plenty of silver sand, and a portion of finely broken charcoal, form a porous and suitable mixture. See that the whole is properly moist, which consists in being neither wet nor dry. Place in the pot or pans, pressing down fairly firm to within an inch of the rim, making quite level on the surface. Give a gentle watering with warm water through a fine-rosed can. When drained the seed may be sown, scattering thinly on the surface, just whitening it with fine sand. Great care must be exercised, as the seed is very small. It is not absolutely essential to cover the seed, though if it is done a mere dusting with soil or sand through a hair sieve will suffice.

Plunge the pots or pans to half their depth in the moist fibre. Cover with a pane of glass, and darken with moss or paper until the seed germinates. Then remove and admit air gradually. Let the seedlings have all the light possible, but maintain a regular brisk temperature and adequate humidity. As the seedlings advance in size they will require increased light and air. The general temperature and atmosphere of the stove will by this time have become suitable, and the pots or pans may be accommodated on a shelf near the glass in the warmest part of the structure. Shade when necessary from bright sunshine. Water must be given of the same temperature as the house, or a little warmer, by placing the pots or pans in the water so that moisture may percolate upwards by capillary action. The seed pots, however, should be taken out of the vessel of water as soon as the first signs of moisture appear through the surface.

Transplanting of the seedlings may be commenced when the most forward have attained a sufficient size. This is easily effected by means of a small flat stick, notched at the point, so that the little plants can be readily lifted without injury, and transferred to the

surface of prepared compost in other pots or pans, about an inch apart. Water but lightly, and keep rather closer and shaded for a short time, then assign the plants a warm position near the glass. The next move must be to 3-inch pots, and after that to 5-inch pots, in which the plants will grow to a good size, having large leaves and a quantity of flowers. When in flower in summer the plants do well in an ordinary greenhouse. The compost for the final pottings may consist of equal parts loam, peat, and leaf soil, with a little decayed cow manure, sand, and charcoal.—E. D. S.

DISCURSIVE NOTES AND QUESTIONS.

TEN MINUTES' JOTTINGS.

OCCASIONS may often arise for penning short notes of an instructive, suggestive, or inquiring character on different subjects when anything like a lengthy article could not be written on a particular subject. Moreover, I am inclined to think that a series of variety notes may not be less interesting, while easier to produce, than an elaborate essay. A few useful points of practice may be embodied in a few lines; questions may elicit information, and suggestions are never lost when recorded. I send a trio of ten minutes' jottings:—

CINERARIA PESTS.

I should be glad to know if there is a more radical cure for the ravages of the "leaf miner" or larvæ of the Celery fly (*Tephritis onopordinis*) than by hand manipulation. For some years I was luckily free from the pest, but recently it has been most troublesome, completely spoiling the appearance of Cinerarias by the mole-like burrowing in the leaves. I should like more testimony to convince me that plants unfed by artificial manures are the more severely attacked. I have noticed this on more than one occasion, and it leads me to think that the larvæ are not so partial to the tissues highly impregnated by the constant use of organic manure. Might we not anticipate in the future that by the skill of some experimentalist a chemical combination will be produced that, while acting as a manure, would fortify the plants against this destructive leaf miner? Singularly enough my next-door neighbour is never troubled with the pest, while I am much pestered, the plants in each case being grown under apparently the same conditions. Who can solve the problem?

SQUIRRELS *versus* WALNUTS.

Having several large Walnut trees within easy distance of the shrubberies and flower beds, and seeing occasionally at this time of the year the squirrels making various excursions thither, led me to watch their movements. After sundry scratchings in different parts of the beds they would find their hoard and make off to a neighbouring tree to enjoy their meal. Two things struck me as worthy of emulation, and as lessons which we ourselves might benefit by in our walk through life; first, the industry of these nimble-footed creatures. When their harvest is ready they are not allowed to be disturbed here, so that quite an army of them congregate. Silently, and with surprising quickness, do they collect the nuts one by one, and disappear for a few moments, returning again and again until all were "gathered in." I have come to the conclusion that these wise creatures bury their spoil singly in most cases in the ground. But why singly? Because of enemies, which if the nuts were stored in one heap might find their storehouse and empty it—a circumstance which could not happen in the former instance. Are the squirrels guided by smell or instinct in finding the solitary nuts? They do not seem to know the exact whereabouts of their hoard right away. One can understand the labour and exertion necessary to enable them to so store away their winter sustenance so securely. When in the heyday of abundance of good things there is no undue feasting and merrymaking, but one and all seem bent on securing as good a store as possible, putting by for the rainy day so sure to come. An all-wise Providence gives to these lowly animals the instinct to provide for their future well-being; surely it behoves all of us to imitate it in as large a measure as our means allow, bearing in mind the old maxim, "Heaven helps those who help themselves."

FLUED GARDEN WALLS.

It would be interesting to know whether there are still any of these now generally obsolete arrangements in use at the present time. They were in full swing here over forty years ago, but now only the double fire hole doors remain as outward evidence of the practice at that period. The oldest men can refer to the time when over each of these flue doors, which are situated about 20 yards apart, were roofs, and these, with the chimney pots on the walls, would, I imagine, give one the idea of a fort garrisoned with soldiers on the look-out for an enemy, rather than merely an artificially heated fruit wall. We still have in use a few of the blind poles, also some of the oak slabs, fashioned like a capital L, for gripping the 3 feet 3-inch wide coping stones, with a pulley at one end for the cords to go through, to draw the blinds up or down. The flues are made oblique or slanting. I should think the wall in the line of the flue would be very warm as compared with that part more isolated. It is difficult to see the utility of all this expense, with the attendant cost of firing. I believe there were fourteen double sets at work here in their owner, Sir Robert Heron's time. Are there gardeners still alive who can give us their personal experiences of the working of these ancient flues in garden walls?—GEO. DYKE, *Stubton Gardens, Newark.*



WEATHER IN LONDON.—On Thursday morning a very heavy fog enveloped the West-end of London, impeding traffic to a considerable extent, but towards the evening it cleared. Friday and Saturday were both fine, though not bright, while on Sunday it was slightly foggy throughout the day. No rain fell in the latter half of the past week, neither was there any frost. Monday was foggy throughout the day, but Tuesday was clear and bright.

WEATHER IN THE NORTH.—During the past week, with the exception of the 12th, the weather has been almost uniformly dull. Westerly winds have been frequent, and the temperature has been unseasonably high, 44° during the night recurring. Tuesday morning was gusty and wet. Snowdrops are getting into bloom, Crocus and Daffodils well above ground, and Roses show shoots over an inch in length.—B. D., *S. Perthshire*.

ROYAL HORTICULTURAL SOCIETY.—SCIENTIFIC COMMITTEE.—At the meeting on January 11th there were present Mr. Michael (in the chair), Dr. Müller, Dr. Russell, Rev. W. Wilks, and the Rev. Prof. Henslow, Hon. Sec. The minutes of the last meeting were read and confirmed. *Fungus on Beech.*—A box of fungi was received from Lady Cave, Cleve Hall, Downend, near Bristol. They were forwarded to Kew, whence it was reported that they were *Pleurotus ostreatus*, Jacq., "one of the best and safest of edible fungi." The specimens were taken from a very old Beech in the gardens of Cleve Hall. They were growing on the wood about 12 feet from the ground.

ROYAL HORTICULTURAL SOCIETY.—THE COUNCIL.—We observe from the balloting paper just issued that the three retiring members this year, in accordance with the bye-laws, are Messrs. Norman C. Cookson, James Douglas, and Thomas Gabriel. The Fellows recommended to fill the vacancies thus created are Sir Frederick Wigan, Bart., Mr. J. Gurney Fowler, and Mr. James Hudson. As the gardeners' representative Mr. Douglas has proved a very useful member, but he is now a commercial florist, and we have not a doubt that Mr. Hudson will prove himself an equally worthy representative of the craft that he adorns. We congratulate him on his nomination, which is no doubt tantamount to election to the honourable board. We may perhaps add that the chief bye-law, which governs the retirements and elections, is the following:—"At every annual meeting of the Society three members of the Council shall be removed by ballot of the Fellows present, and the vacancies so created shall be filled up by the election by ballot of the Fellows present of three other discreet Fellows of the Society." The annual meeting is to be held on February 8th.

R.H.S. FINANCES.—It is gratifying to notice that the total income of the Society during the past year amounted to £6303 13s. 7d., also that there is a balance over expenditure (£5481 6s. 3d.) of £822 7s. 4d. The deaths of Fellows in 1897 numbered fifty-three, the resignations fifty; together involving a loss of £134 8s. As compensation we find that 428 Fellows were elected during the year, equivalent to a gain of £551 15s. 6d.; after deducting the above loss there is a net increase in income of £417 7s. 6d.; numerical increase of Fellows, after deducting the loss of 102 above mentioned, 325. Thus the Society is in a thoroughly sound state—a state moreover of increasing prosperity, for we believe the election of new Fellows at the last meeting was unusually large, and thus indicative of another prosperous year.

THE CULTURE OF VEGETABLES AND FLOWERS FROM SEEDS AND ROOTS.—The continued demand for this admirable work of Messrs. Sutton & Sons is the best possible proof of its acceptability. The seventh edition is before us, and from whatever point of view regarded, excellence in production, variety in subjects treated, soundness of information, or attractiveness and instructiveness of the illustrations of insects and fungi, we are bound to speak of it in terms of the highest praise. The cultural requirements of all kinds of garden vegetables, also of flowers raised from seeds and roots, are clearly set forth, and the same may be said with regard to the formation and management of lawns and tennis grounds. The work may be fairly described as a safe gardener's guide and trustworthy amateur's friend, and neither one nor the other will err by following the advice contained in its 418 pages, plus an excellent index.

ROYAL GARDENERS' ORPHAN FUND.—We have the pleasure to announce that C. E. Keyser, Esq., Aldermaston Court, Reading, will preside at the annual festival dinner of the Royal Gardeners' Orphan Fund on Wednesday, the 20th April next, at the Hotel Metropole.

RAINFALL AT OLD WARDEN PARK, BIGGLESWADE, IN 1897.—Mr. G. R. Allis writes:—"The rainfall as registered here during 1897 amounted to 27.09 inches; rain fell on 137 days, and snow on five days. March was the wettest month, when rain, 3.41 inches, fell on twenty days. July was the driest month, 0.34 inch. The rainfall for 1895 and 1896 amounted to 25.86 and 25.7 inches respectively."

"PROFESSIONAL."—At an inquiry held at Lambeth the other day, a witness described himself as a professional gardener. The Coroner: All men in your business call themselves professionals, don't they? Witness: There is a vast difference between professional and ordinary gardeners. I am competent to give a lecture on botany and horticulture. The Coroner: Then ordinary gardeners only scrape the weeds up, I suppose? (Laughter.)

DEATH OF SIR JOSEPH TERRY.—Last week we (on page 33) briefly reported the proceedings of the annual meeting of the guarantors and life members of the Grand Yorkshire Gala as presided over by Sir Joseph Terry, who was at the same meeting unanimously elected Chairman of the Council for the current year. It is with deep regret that we find the death of Sir Joseph occurred suddenly when our report of the meeting was in the press. The deceased gentleman, who had been thrice Lord Mayor of York, was an active worker in the interests of the Gala and flower shows, and a warm welcome was always accorded him when presiding at the Judges' luncheon. In his quiet, happy way he made all happy around him, and by his innate urbanity and geniality won the esteem of all classes. He was held in great favour by horticulturists who visited the shows from year to year, and his loss will be much lamented. The deceased gentleman was seventy years of age.

THE ROYAL BOTANIC SOCIETY.—At the meeting of the Fellows of this Society on Saturday, Major Cotton, who presided, referred at some length to the present position of the Society. In the course of his observations, he stated that the year 1897 had been a very eventful one in the history of the Society, and he was pleased to be able to congratulate the Fellows upon the very excellent position in which the Society now stood as compared with its position at the opening of last year. The unsatisfactory position had been resolutely faced, and he was pleased to say that, with the co-operation of the Council and some of the leading Fellows, the Society was now perfectly solvent, and the accumulated debt which had so long been a source of trouble and anxiety, had been swept away. A new lease for the maximum term of thirty-one years had been promised by the Commissioners of Woods and Forests, and it now only remained for the Fellows to use their utmost endeavours and to induce friends to make the Society the success it should be. Not only were the gardens open for study to the pupils of the various medical schools, but a school of practical gardening had been started with the concurrence and aid of the London County Council. Reference was made to the great increase in the numbers of Fellows elected in 1897, there having been more than eighty above the average numbers of the last ten years.

GRAPES.—The new Grape Directeur Tisserand, recently receiving an award of merit, and which was again placed before the Fruit Committee on the 11th inst., whilst exceedingly nice, yet showed that it would not keep long, as the berries had begun to shrivel. It was felt under the circumstances that any higher award would not be justified. It would have, of course, been useful to have learnt how early or otherwise the Vine carrying the fruit was started into growth. Compared with the fine and perfect berries seen on Mr. J. Bury's Colmans and Alicantes those of the new Grape were too advanced. Still, it is very difficult to pronounce an exact verdict until the Grape has been more widely grown. The Alicante sport staged by Mr. Rochford presents features of great interest. The bunch shown indicated free setting, a Gros Colman berry, although rather more oval, and an Alicante skin. Well finished, which the sample sent was not, it should hang very late. This seems to be a pure sport, and at present is growing on a rod which carried below the sport union fine bunches of Alicante. The sport had produced several bunches. Judging by the indifferently coloured sample seen it would appear to need a long season like Gros Colman. When it is propagated, as perhaps it already is, and has fruited on its own roots, then its real character will be seen. The present inference is that it will develop into a most valuable late-keeping Grape. Mr. Bury's collection of Grapes, apart from their table value, very markedly helped to show how Grapes may be marketed in the best possible condition in the now well-known cross-handle baskets.—A. D.

— **FLAX AND HEMP.**—We find from the prospectus of the English Fibre Industries, Limited, of which Mr. Chas. T. Druery is the Secretary, that, despite the enormous home consumption of both staples, raw and manufactured, our country has practically been entirely dependent for its supplies upon outside sources, importing Flax and Hemp to the annual value of about four and a quarter millions sterling, and Linseed to over three and a quarter millions in addition. "At present the Company is converting raw Flax into fibre and selling the same," and evidently wants to do sundry other things for fostering home industry and making money.

— **KNIPHOFIA PRIMULINA.**—Several plants of this charming species are now to be seen in flower in the temperate house at Kew. Through its lateness of flowering it has been found to be of little use for outside work, but grown in pots and stood in a cold frame on the approach of winter, it is found to make a very acceptable addition to the greenhouse after Chrysanthemums are over. It adapts itself readily to this mode of culture, growing strongly and flowering freely, plants in 8-inch pots producing three or more spikes of flowers of a pale yellow colour. As it can be grown outside until the spikes begin to show, and can be put outside again at the end of March, it will stand with feeding several years in the same pot. It is bound to be, as it becomes better known, one of the most popular winter-flowering greenhouse plants. If any plants are not showing flower at the end of November, and there is no frame room for them, they should be plunged deeply in dry leaves, this being the best protection against frost.—W. D.

— **HIMALAYAN RHODODENDRONS.**—The members of the Devon and Exeter Gardeners' Association were much interested recently, at the Guildhall, Exeter, in a paper prepared by Mr. Richard Gill of Penryn, Cornwall, on the subject of Rhododendrons. The introduction of many of the tenderer forms instituted a new era in outdoor cultivation. In the West of England and South Wales, in addition to the mildness of the climate, the humidity of the atmosphere greatly favoured the Rhododendron. They were great lovers of peat in some form or other. Granite sand, in the proportion of one-third, might be added with good results. The plants did not like a lime or chalky soil, or a stiff water-logged clay. Being surface-rooting plants, they would not stand prolonged droughts, but care must be taken to prevent the accumulation of stagnant water round the roots. The lowest branches of the Rhododendron should be carefully preserved and encouraged, as they kept the soil around the roots comparatively moist in the driest season.

— **KENSINGTON PALACE.**—Relative to the opening of the State rooms of this historic place to the public by the Queen, a daily paper remarks that the beautiful banqueting room of Wren's is used as a potting shed; and also goes on to say that some idea of the gardens in the time of William and Anne may be had from the following description. In those days the Dutch taste, of course was predominant—evergreens were transformed into shapes of birds, beasts, and monsters; slopes, labyrinths, trees trimmed into gigantic dumb-waiters; long alleys of alternate Box and Apple trees, with obelisks peeping between every other tree. "To crown these impotent displays of false taste," says one writer, "the shears were applied to the lovely wildness of form with which Nature has distinguished each various species of tree and shrub. The venerable Oak, the romantic Beech, the useful Elm, even the aspiring circuit of the Lime, the regular round of the Chestnut, and the almost moulded Orange tree, were corrected by such fantastic admirers of symmetry."

— **SOCIÉTÉ FRANÇAISE D'HORTICULTURE DE LONDRES.**—The ninth annual dinner of this flourishing Society was held on Saturday evening last, the 15th inst., when Mr. Herbert Cutbush occupied the chair. The gathering was well attended, and the proceedings were of the heartiest nature. Amongst the visitors representing English horticulture were Mr. H. J. Jones, Mr. Wm. Cutbush, Mr. Harman Payne, Mr. Harry Laing, Mr. J. Weathers, and several more. Dinner being over, the President of the Society, Mr. George Schneider, formally introduced the Chairman, who, in an excellent speech, reviewed the progress of the Society. Mr. Schneider, in reply, thanked the members for the spirit of comradeship that always animated them. He also attributed a large measure of the success of the Society to English friends. At this point a little surprise was in store for Mr. Schneider as Mr. Gachlein arose to make him a presentation of a case of cutlery and an address on behalf of the new members. Mr. Schneider appropriately replied to this unexpected demonstration of good feeling towards him, and as a close to the proceedings, the company very heartily sang the English and French National Anthems. Messrs. Cutbush & Sons of Highgate received a cordial vote of thanks for the floral decorations.

— **RICHMOND HORTICULTURAL SOCIETY.**—We are informed that the summer show of this Society has been fixed for Wednesday, June 29th.

— **MILD WEATHER IN ARGYLLSHIRE.**—Mr. Thos. W. Pritchard, Glenborrodale Castle Gardens, Ardgour, writes:—"The weather in this district is very mild. We have Primroses and Rhododendrons in full flower, and have not registered frost since October, 1897, then we had only 3°."

— **A GARDENERS' ASSOCIATION'S ALMANACK.**—We have received a large sheet almanack, 25 by 20 inches, prepared by the Isle of Wight Horticultural Association. It is an excellent example of its kind, appropriate and useful. It contains a list of the officers of the Society, honorary members, and gardener members, as well as the dates of shows of the eighteen horticultural societies in the Island; a selection of books for gardeners to read; tables of planting, distances, and the longevity of vegetable seeds; dates of the R.H.S. and the N.C.S. meetings; also a good calendar of gardening operations. It is the first sheet of the kind we have seen as issued by a gardeners' association, and is a highly creditable production.

— **WINTER VEGETABLES.**—What a remarkable season for all descriptions have we had so far, and how cheap and plentiful they have been. If market growers have not obtained high prices, and the day for those in connection with hardy vegetables seems to have gone absolutely, at least they have had plenty of material to market, and gathering has been very easy. Probably the chief loss, so far as there has been any, has laid with Savoy Cabbages, for whilst these have been forced by the mild weather into hearting early and universally, they have been little in demand. Mild weather favours Cauliflowers, which have been wonderfully abundant; early Broccoli, Brussels Sprouts, and Coleworts, and when these Brassicæ are plentiful Savoy are little called for. The Savoy, too, is essentially a hard weather Cabbage, but so far with Savoy white in heart, in vast quantities, the hard frosts have been absent. No doubt market growers would plant few or many of these Savoy could they foresee mild or hard winters. Yet the Savoy planted much later than usual, that it might heart in small and green in March, might prove to be a most profitable Cabbage crop. Next to the "Whiteheads," the long-enduring Brussels Sprouts hold the field for popularity with the general public. Coleworts and early White Cabbages come next. The real pinch is found in April and May, when all ordinary winter stuff being over, very late Sprouts, early spring Cabbages, and Spinach are the chief hardy products. How very valuable just then is a good stock of Seekale for blanching. Hardy as is this product, easily grown, and most profitable, still the day seems far distant when it can ever become a cheap people's winter vegetable.—D.

— **READING GARDENERS' ASSOCIATION.**—The annual general meeting of the Reading and District Gardeners' Mutual Improvement Association was held recently, Mr. C. B. Stevens presiding over a good attendance of members. The report and balance-sheet, read by the Hon. Secretary, Mr. James Pound, jun., were of a very satisfactory nature, both showing that the Association was in a very flourishing condition. The membership was still on the increase; thirty-one new members had been elected during the year 1897, making over 180 "paid up" members on the books, whilst the balance in hand was double that at the end of 1896. The Committee regretted the death of Mr. Alfred Sutton, who had always taken a great interest in the work of the Association, and had since its formation in 1888 provided the club-room for their meetings. They also record the death of Mr. George Palmer, who was an annual subscriber from the commencement of the Association. The meetings during the year had been well attended, on some occasions upwards of eighty members being present. The thanks of the Committee were due to the President, Mr. C. B. Stevens, for the great interest shown not only in presiding at their meetings, but taking an active part in all the other business connected with the Association; to Messrs. Sutton & Sons for their kindness in providing a room at the Abbey Hall for the use of the members, and supplying it with horticultural and other literature; to the honorary members for their kind and general support; to those who have helped forward the work by reading papers and introducing subjects for discussion; to those who have added so much interest to the meetings by bringing exhibits of flowers, and to the horticultural and local press for publishing reports of the meetings. A beautiful group of well-grown Cyclamens was shown by Mr. W. Townsend, The Gardens, Sandhurst Lodge, noticeable being Sutton's Butterfly, Vulcan, Salmon Green, and Giant White varieties.

— **THE HAMBURG INTERNATIONAL HORTICULTURAL EXPOSITION.**—We observe that this exhibition, which closed at the beginning of October, resulted in a surplus of 300,000 marks. The amount received from season tickets was 810,000 marks, and from daily tickets 770,000. The receipts for rentals of dining halls and sale of privileges was enormous. This shows the interest which the German people take in horticultural matters.

— **MARRIAGE OF MR. BERNARD COWAN.**—The marriage of Mr. Bernard Cowan, Harton Cemetery, with the widow of the late Mr. Peter Marshall of South Shields, which took place on the 13th ult., may be matter of interest to many readers. Mr. Cowan is a lecturer on horticulture for the Durham County Council. He was the first Chairman of the Newcastle and District Horticultural Mutual Improvement Association, and is one of the Vice-Presidents of the English Arboricultural Society. He is also Secretary of the South Shields and Northern Counties Chrysanthemum Society.

— **ANCIENT SOCIETY OF YORK FLORISTS.**—The annual meeting of the above Society was held on the 11th inst., Mr. Councillor J. E. Wilkinson in the chair. There was a good attendance. The Secretary (Mr. John Lazenby) read the report and balance-sheet. The report showed that the year's work had been very satisfactory. Financially, it was satisfactory to note that at the close of the year there was a balance in hand of £180 11s. 11d., as against £177 17s. 1d. last year. Mr. Lazenby writes:—"A most regrettable circumstance happened to us in the death of our beloved President, Alderman Sir Joseph Terry, within a few hours of his re-election." A sum of £70 was allotted for the minor or summer free shows, and £170 to Chrysanthemum show, this year, apart from many special prizes offered.

— **"THE GARDEN AND FOREST."**—It is a matter for regret to learn that this admirably conducted journal has ceased to exist. For years it has been considered one of the best managed and most reliable of the American gardening papers, and many readers will miss it. In announcing their decision the conductors say, "With the present issue, which completes the tenth volume, the publication of 'Garden and Forest' ends. For ten years the experiment has been tried of publishing a weekly journal devoted to horticulture and forestry, absolutely free from all trade influences, and as good as it has been possible for us to make it. This experiment, which has cost a large amount of time and money, has shown conclusively that there are not persons enough in the United States interested in the subjects which have been presented in the columns of 'Garden and Forest' to make a journal of its class and character self-supporting. It is useless to expend more time and money on a publication which cannot be made financially successful, and must, therefore, sooner or later cease to exist."

— **THE WEATHER.**—It is not wise to holloa before you are out of the wood, nor to cry out summer when winter is not half over. Only three years ago one of the hardest frosts of the century occurred as late as February. But so far as the winter has gone it has undoubtedly been one of the mildest we have had for many years past. With the exception of three or four days about Christmas time there has been no frost to speak of in any part of England. In London the thermometer on no fewer than thirteen out of the past forty-three days has risen in the daytime to 50° or more, and on two consecutive days in the middle of last month it went above 55°. On four days only has the thermometer failed to touch 40°, and on the coldest of these it rose to 37°. Frost has occurred in the screen on as many as fourteen nights out of the forty-three, but with the exception of five occasions ending with Boxing morning, it has never prevailed for more than two nights in succession, and has never been of any great severity. Neither snow nor sleet has been seen in London. This is a state of things without parallel in the winters of the past five-and-twenty years. In the winter of 1888-89 snow did not put in an appearance in London until the 12th January, but with this exception a fall of greater or less severity occurred in every December of the past twenty-five years, in thirteen Novembers, and even in six Octobers. The prevalence of fog in London this winter has been generally looked upon as far in excess of the average. Taking, however, the number of days only on which it has occurred, irrespective of density or length of continuance, there have been other winters of recent years equally ill-favoured, among them being the seasons of 1891-92 and of 1892-93. If, however, we have had more fog than is our due, we have certainly been favoured with an unusual amount of bright sunshine. At Greenwich the total duration last month was no less than fifty hours, being as many as fourteen hours in excess of anything recorded there in December since the sunshine instrument was set up in 1876.—("Daily News.")

— **DEATH OF MR. MAX DEEGEN.**—We regret to have to record the recent demise at the age of fifty-six years of this well-known Dahlia grower. The death occurred at Köstritz, in Thuringia. For many years he has been known as one of the most successful raisers of new Dahlias, and English, with foreign growers, will feel the loss.

— **DEATH OF MR. M. LAURENCE.**—Many persons will deplore the death of Mr. Michael Laurence, who since 1847 has had charge of the flower gardens at Tostock House, Suffolk, the seat of Mrs. William Gilbert Tuck. Although more than eighty-two years of age, he remained active until the last, and was rarely absent from his work.

— **ISLE OF WIGHT ASSOCIATION.**—The annual meeting of the Chrysanthemum Society was held at Newport on the 15th inst. Dr. J. Groves, B.A., J.P., presided over a large attendance of members and exhibitors. The report and balance-sheet were unanimously adopted on the motion of the Chairman, who regretted that the balance in hand was less than last year—£18, against £22 last year. The question of an Isle of Wight championship prize was brought forward and delegated to a Sub-Committee, to discuss and report to the Society. Sir Chas. Seely, Bart., was re-elected President, Dr. J. Groves was re-elected Chairman, and Dr. Coombes re-elected Treasurer, and Mr. C. H. Cave Hon. Secretary.

— **PLANTING AND PRUNING.**—The second of the lectures organised by the Morden Cottage Garden and Industrial Society was given on Thursday last at the Village Club, Morden. The lecturer was Mr. C. Gibson, head gardener to J. Wormald, Esq., of Morden Park, and he took for his subject "Planting and Pruning." Touching lightly on the ordinary trees and evergreens, the details of various kinds of fruit trees were carefully gone into; their selection, planting, soil, mulching, and removal. The dangers of deep unskilful planting were pointed out, and hints given as to the best kind of fruit trees for a cottager to select, the most early and prolific, and the price which ought to be paid for them. The second half of the evening was devoted to pruning, and the interest was much heightened by specimens of trees pruned by different methods and not pruned at all; these were explained and experimented on, and the lecture closed with an interesting discussion.

— **CARNIVOROUS SLUGS.**—The observations made by Mr. Thomas Arnold (page 39) are exceedingly interesting, as but few records apparently exist in support of the statement that worm-eating slugs seize and swallow other slugs. I have heard of two *Testacellæ* being found with the opposite ends of the same worm in their mouths, but Mr. Arnold "goes one better," though he does not tell us which slug made the best meal. Judging from the drawing (fig. 7) the mollusc in question is *Testacella haliotideia*, though it might be the other small shelled species, *Testacella scutulum*. The latter is usually more yellow than the former, and the lines on its back meet in front of the shell, while in *T. haliotideia* they run together just under its edge. With regard to the larger shelled species, *T. Mangei* was evidently a misprint for *Maugei* (named after Mauge). The fact that it has now been found in most south-western counties of England, in Wales, and in Ireland, points to its being indigenous to this country. I should be pleased to hear anything my readers may know of white (albino) or black examples of these slugs, and to have any specimens they may be kind enough to send me, as I am still engaged in working out their distribution.—WILFRID MARK WEBB, *Ellerie, Brentwood.*

— **CROWN WOODS AND FORESTS.**—The report for the year ended 31st March, 1897, of the Commissioner in charge of the Crown woods and forests has been issued. The property under the direction of the Commissioner comprises the New Forest, Dean Forest, and the whole Crown property in Wales, county Monmouth, in Scotland, in Ireland, and in the Isles of Man and Alderney. The income derived from the New Forest from sales of forest produce amounted in the year 1896-7 to £7355 4s. 11d., and certain service rents, amounting in the same year to £3099 11s. 8d. The income derived from the Forest of Dean from the sources above mentioned amounted to £5305 17s. 7d., and £1856 12s. 11d. respectively. During the year there were about 660 acres added to the area enclosed for planting purposes. With a view to introduce in the Forest of Dean and the Highmeadow Woods a more scientific and systematic system of forest cultivation than has hitherto been adopted, the Commission has arranged with an experienced Conservator of Forests in the Indian Forest Service to make a detailed examination of the woods and furnish a report on them. It is desired not only to improve the prospective yield of the Forest, but also to establish such a system of management as may serve those who desire to study forestry in this country with a good practical object lesson, such as at the present time they have to go to France or Germany to find.

DEATH OF MR. J. LINDEN.

THE death is announced of one of the most celebrated of Belgian botanists and horticulturists, Mr. John Linden, of Brussels, which occurred on the 12th inst. In his early manhood Mr. Linden was one of the greatest of plant collectors, and he travelled for many years in search of novelties, more particularly Orchids, and it was his discovery of species growing at high elevations on the Cordilleras which demonstrated that many Orchids could be successfully grown in much lower temperatures than had hitherto been possible.

Mr. Linden eventually became Director of the Zoological Gardens at Brussels, and he established a nursery in the environs of that city. From there he went to Ghent, and for some time carried on an extensive business in the nursery formerly belonging to the late Mr. Ambroise Verschaffelt. Mr. Linden subsequently returned to Brussels and formed a company, of which his son, Mr. Lucien Linden, is the manager. This is, no doubt, one of the best arranged nurseries in Europe, and on our last visit we were much impressed by the systematic arrangement of the structures, and the orderliness and the cleanliness of the establishment throughout.

Mr. Linden was some years ago a formidable competitor at horticultural exhibitions, and one of his greatest contests was for the large gold medal of 500 francs at the Brussels Centennial in 1876, offered for a collection of twenty-five *Dracenas*, remarkable for their novelty, their culture, and their beauty. Mr. Linden probably exhibited the grandest plants ever seen at any exhibition, some of them 8 feet high, clothed with leaves to the base, some of them being 4 feet long; but the late Mr. C. F. Bause had just time to grow the then startling novelties which he had raised for the late Mr. John Wills, to exhibition size, and to these the Jury, after an hour's examination and consideration, awarded the medal. This was, perhaps, the most exciting contest we have witnessed. Mr. Linden's magnificent plants were overwhelmed by the "novelty" of those placed against him, while they were as well grown as plants could be of the age at which they were exhibited; yet, notwithstanding, Mr. Linden won the Queen's Prize of Honour, and may be described as the premier Belgian exhibitor at that memorable show.

He was a diligent worker in the domain of horticultural literature, of which the "Illustration Horticole" and the beautiful "Lindenia" afford abundant testimony, and his name is commemorated in many plants which are grown in gardens all over the civilised world. Mr. Linden was eighty years of age.

HARBINGERS OF SPRING.

THE mildness of the present winter has done a little to compensate for the more than usual amount of foggy and otherwise dull weather which has been experienced about London during the past two months. From the absence of severe frosts many spring flowers are now open which are usually a month or more later. At Kew, on January 9th, forty species of hardy plants were noted in flower, including shrubs, herbaceous and alpine, though, of course, were a few sharp frosty nights to come most of these would be injured.

It will, perhaps, be of interest to mention some of the most noteworthy of the plants referred to. Among shrubs a very attractive sight is a bed of *Hamamelis arborea*: the plants are about 9 feet high, and every branch is wreathed with bright golden blossoms. On a wall near by several plants are flowering, *Chimonanthus fragrans grandiflora* being particularly fine. There is also a specimen of the male *Garrya elliptica*, which is well worth growing both as an evergreen and flowering shrub; at present its long green catkins are the chief attraction.

In the arboretum several *Erieas* are flowering. The most showy is *E. mediterranea hybrida*. It is a dwarf growing plant, resembling *E. carnea* more than *E. mediterranea* in general habit, but taller and rather looser than that species. The flowers are red. Others worthy of notice are *E. carnea*, *carnea* var. *alba*, *mediterranea glauca*, and *E. m. lusitanica*, the latter probably better known under the name of *E. codonodes*. A few flowers are to be seen on *Rhododendron dauricum*, and *R. parvifolium* is nicely in flower. The latter is a Siberian and Northern Chinese species, with small rosy purple flowers; it has a loose scraggy habit, and is not a desirable plant for general cultivation. A few *Arbutus* flowers may still be seen on one or two species, though most of them are now over.

In several places about the grounds there are flowers of *Pyrus japonica*, and in numerous places *Jasminum nudiflorum* is covered with blossoms. *Loisericas Standishii* and *fragrantissima*, both covered with sweetly scented white flowers, look charming, as also does *Daphne Mezereum*. The Glastonbury Thorn, *Crategus oxyacantha praecox*, has been flowering off and on for the last two months, and will continue to open a few flowers for several weeks yet. *Berberis nepalense* looks bright with its large terminal heads of yellow blossoms, while *Viburnum Tinus* serves to enliven several shrubberies.

In the rockery several species of *Helleborus* are in flower, among them being *H. caucasicus*, *colchicus*, *odorus*, *antiquorum*, *orientalis roseum*, and *niger*. The latter species may also be seen flowering freely in several other parts of the gardens. Other plants in the rockery in flower are *Iberis sempervirens Garreuxiana*, *Arabis procurrens*, Snowdrops, and Primroses. *Crocus etruscus*, *Sieberi*, and *Imperati* are flowering in beds near the rockery, while at the foot of the wall between the herbaceous ground and rockery a mass of *Merendera caucasica* is very effective. At the foot of the Orchid house wall a row of *Iris stylosa* is producing

numerous flowers, and will continue to do so for several weeks. Although several other plants are in flower, those mentioned will be sufficient to show that the hardy plantsman can spend an enjoyable walk in Kew, even so early in the year as the beginning of January.—W. D.

LOS ALTOS, SANDOWN, ISLE OF WIGHT.

THIS is the residence of G. W. Drabble, Esq., and is beautifully situated on an eminence, which affords a magnificent inland view of the Island, from the noted Ventnor Downs (south) to Brading (north). To the west the true character of the Island is seen in the innumerable undulations and the adornment of hill and dale with giants of the forests, relieved with cosily situated farmsteads and pretty villages, which give the whole a picturesque appearance.

The gardens attached to Los Altos are ably managed by Mr. J. H. Perkin, a genial and most amiable gardener, who is ever to the fore in developing the horticultural interests of the Island. The vineries are up-to-date structures, and contain some healthy canes of Buckland Sweetwater, Black Alicante, Black Hamburg, Foster's Seedling, and West's St. Peter's, which have produced some fine bunches of Grapes. Tomatoes are splendidly managed, and this year the grower secured the Isle of Wight Horticultural Improvement Association's certificate for a fine dish of the variety Polegate.

The stoves contain a fine collection of table and decorative plants, which are in great request when the family is in residence. The Palm house, which is 40 feet long and 22 feet wide, was built in 1890, and contains some huge Palms, Tree Ferns, *Araucarias*, and *Dracenas*. The conservatory is a modern structure of about the same dimensions, and is admirably adapted for the preservation of flowering plants taken from the houses.

The fruit crops suffered more or less last season, with the result that small fruits, and Apples and Pears, have only been about the average, whilst Cherries and Plums were below the average. An extensive kitchen garden is well cropped. The beauty of the estate is undoubtedly enhanced by the magnificent specimens of *Coniferae* on the lawn and on both sides of a long carriage drive. The illustration (fig. 10), from a photograph by Mr. Alfred Drabble, conveys an excellent idea of the estate and of the Island.—S. HEATON.

CARDOONS.

THE Cardoon is more appreciated on the Continent than in England; but, nevertheless, it is met with in this country oftener than was the case some few years back. This serves to show that its merits as a winter vegetable, and as an agreeable change when choice is somewhat limited for the table, is gradually but surely coming to the front. When well blanched, properly cooked and served, Cardoons are not to be despised by any means, as they then make a palatable dish.

We do not require the produce for use before November, and therefore we do not sow the seed in pots. On the other hand, if good stout plants are required for August exhibitions, or very early autumn use, they should be sown in small pots in February, placing two seeds in each, and if both germinate reduce the number to one. Stand the pots in a vinery just started. When the plants are large enough transfer to 48-size pots, and put back in the same structure until the roots have taken to the fresh compost, when the plants may be removed to cooler quarters, and gradually hardened prior to being planted out towards the end of May.

Unless the soil is of a very tenacious character they are best grown in trenches, as prepared for Celery. If allowed to become dry at the roots the stems instead of being juicy and succulent will be hollow and pipey, and the plants will be only fit for the rubbish heap. We usually get out our trenches for Cardoons 8 feet from row to row, and crop between them with such vegetables as Spinach, Turnips, Lettuce, French Beans, or anything not likely to occupy the ground for any great length of time. Room should be left so that water can be given freely when needed.

After taking out the trenches 1 foot in depth, place about 6 inches of decayed manure in the bottom, cover over this 4 inches of fine soil, made firm by treading well. Early in April stretch the line down the centre of the trench and place three seeds every 2 feet apart, but at the final thinning allow only one plant to occupy each space. Should the weather be dry at the time of sowing a good watering will soon cause the seed to germinate, and as the young plants appear keep a sharp look out for slugs, or they will find their way to the tap root, and eat away the centre.

The prominent sharp spines on the leaves are not conducive to Cardoons becoming general favourites with gardeners, as tying them up for blanching is by no means a pleasant occupation. Hay bands form the best material for wrapping around the stems, after which soil must be added to keep the plants upright and secure from frost. Cardoons form imposing objects when used in subtropical bedding or as single plants in large borders.—C. FOSTER.

MARKET GARDENS, DENVER, COLORADO.

By way of preface, Denver is located at an altitude of 5196 feet. According to the observations of the United States Signal Service Bureau the average temperature is 49° (the average maximum being 79° and the average minimum 19°); the average annual rainfall or melted snow, 14.95 inches; the average number of days per annum on which snow or rain falls, 81; average number of sunny days, 340.

The Denver of the "sixties" was a struggling frontier settlement of less than 5000 people, 700 miles west of the nearest railroad. The Denver of to-day is a city of 165,000 people, with numerous seven, eight, and nine-storey business buildings and hotels, 150 miles of electric and cable street car lines, and the "hub" from which radiate over 26,000 miles of railroads, giving quick access to every part of the United States, and placing Denver within thirty-six hours of Chicago, fifty hours of New York, and ten days of London. In the early "sixties" a Denver man who had the temerity to attempt to raise Cabbages evoked much merriment. He succeeded, however, and sold his Cabbages readily at Central Africa prices, namely, from 50 cents (2s.) to 75 cents (3s.) per pound,

known. The rich sandy soil near Denver seems peculiarly adapted for it. A few years ago Celery from Michigan was considered the finest in America, but now takes second place to the Colorado product. Denver Celery commences to go to market early in August, long before Celery from any other point is fit to eat, and excels in being sweet, brittle, and succulent. Speaking from personal experience, it is infinitely superior to English grown Celery in appearance, crispness, and flavour, the Colorado growers producing a small, compact, white, and useable head, with the maximum of heart and the minimum of outside, as against the larger, coarser, and inferior head usual in England, and marketed there with tough, stringy, purple, red, or green outside stems.

The Celery is raised in hotbeds early in the spring, and by the time the ground is ready the seedlings are large enough to transplant into rows. Here they are irrigated and cultivated until grown with a good top, when the gardener prepares for bleaching. This is done by building a protection of boards for the lower part of the plant, in such a way that when completed the Celery looks as if it were in a trough. Only the tops are visible, the bottom part being concealed by the boards, held in place by stakes driven in the ground. When the stalk is bleached perfectly

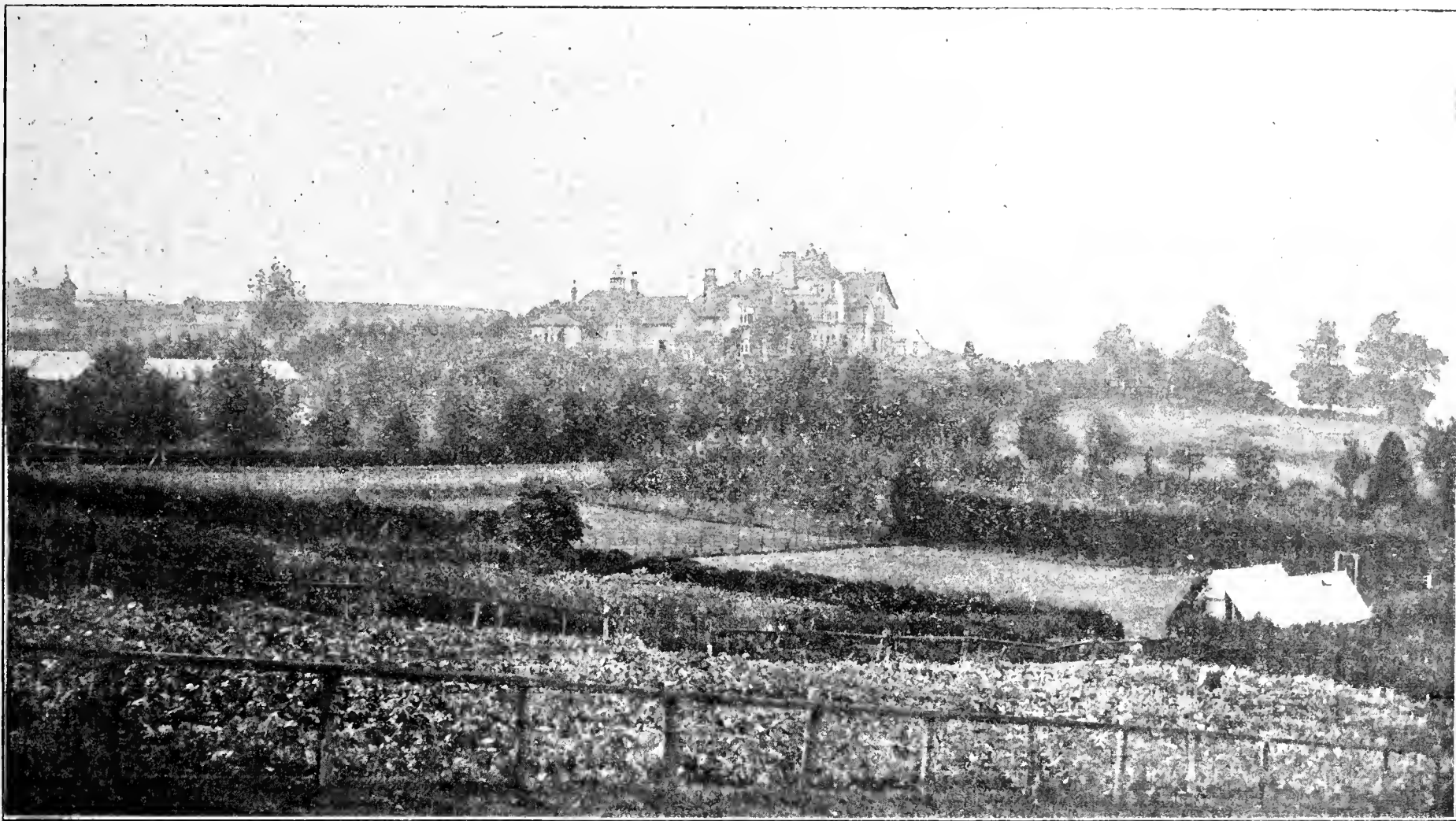


FIG. 10.—LOS ALTOS, SANDOWN, ISLE OF WIGHT.

giving him the laugh on his neighbours. From that beginning, but chiefly during the last ten years, the vicinity of Denver, by means of artificial irrigation, has become a district of market gardens, brief particulars of which will interest your readers.

Four or five years ago a few vegetables were shipped from Denver by express—i.e., parcel company, but not until 1894 was any attempt made to ship mixed vegetables in carload lots. Since that time, however, the business has grown in a wonderful manner, until now the local market gardens not only supply Denver and many other parts of Colorado, particularly the mining districts, from 7000 to 11,000 feet altitude, but most of Texas, with considerable shipments to Arizona, Utah, Montana, Wyoming, and other States, where the summer heat is too great for successful gardening.

The first carload of Denver vegetables shipped to Texas proved such a success, that last year one whole train of fifteen refrigerator cars went to the principal towns of Texas, besides numerous other considerable shipments, and this season already eighty cars have been shipped, with a still greater number to follow. Be it remembered that these refrigerator cars have a capacity of 20 tons each. The list comprises Potatoes, Cabbages, Celery, Tomatoes, Turnips, Parsnips, and any other crops in season. The crops are frequently contracted for beforehand: say a given number of acres of Cabbages, of Celery, of Tomatoes, or other kinds, so that the gardener knows what to grow. Intense cultivation, and with suitable soil, heavy manuring, good cultivation and climate, heavy crops are the invariable result.

Colorado Celery already has a name for superiority wherever it is

white the Celery is dug, the roots trimmed off, and tied in bunches of a dozen heads to the bunch. It is then ready for the market. Last year hundreds of acres of Celery were grown under contract for export. This year the acreage will be doubled to supply the demand. A visit to the Celery farms along the Platte River will show some of the most prosperous people around Denver. The oldest Celery garden can boast of but eight years, yet the owner has a handsome brick house and one of the neatest and most comfortable homes in the valley. It seems a money-making business, but requires experience and careful work to make it successful.

As to other vegetables, it may be stated that one Denver factory has this season contracted for five hundred (500) acres of local Tomatoes at 9 dols., or about 37s. per ton delivered, the crop ranging from 10 to 15 tons to the acre. The growers have the privilege of selling all they can at the best prices they can to the wholesale and retail trade for fresh consumption, the factory taking the surplus at the above rate. Such factory has a force of considerably over 150 people in its canning department. The same concern has also purchased last season 30,000 bushels of locally grown small Cucumbers for pickling.

As to winter vegetables, one man in the outskirts of Denver has 20,000 square feet of glass, in which greenhouses he grows Lettuces, Radishes, Onions, Cucumbers, Tomatoes, Parsley, and Mushrooms, the latter sometimes selling at as high as 40 cents (1s. 8d.) per lb. It is estimated that the market gardeners around Denver, in addition to their large trade in Colorado, will this year receive 1,000,000 dols. (£200,000) from other States. A number of them are Englishmen, like—THOMAS TONGE.



AN AMERICAN BEST TWENTY-FIVE VARIETIES.

A LIST of this character is ever changing, owing to valuable additions each year made by the different disseminators, and importations of novelties from England and the Continent. Many varieties of which some growers produce beautiful blooms, are almost total failures with others, but in the following list we have endeavoured to include only those that are easily grown by nearly all.

Twenty-five large blooms:—Mrs. Jerome Jones, W. H. Lincoln, Vivand Morel, Mutual Friend, Major Bonnaffon, Mayflower, Eugène Dailledouze, Mrs. Henry Robinson, Golden Wedding, Madame Felix Perrin, Minerva, Mlle. M. A. de Galbert, Modesto, Silver Cloud, Charles Davis, Golden Gate, Mrs. S. T. Murdock, Miss Minnie Wanemaker, Helen Bloodgood, Marguerite Jeffords, Philadelphia, Mrs. Geo. West, Maud Dean, Nyanza, and John Shrimpton. The last named, though not as large as the rest, is the best and easiest grown red. This list does not include any of the novelties of 1897, which will no doubt push one or more out of this list.

The best twelve for pot plants are W. H. Lincoln, Ivory, Agnes L. Dalskov, L. Canning, Minerva, C. B. Whitnall, Golden Hair, Henry Hurrell, Louis Boehmer, Geo. W. Childs, Mutual Friend, and Constellation.—E. A. WOOD (in "American Florist").

THE BEST VARIETIES.

IN my notes *re* "Best Varieties" (page 38) I stated that Mr. Lees omitted *Etoile de Lyon* from his list. This I find is an error on my part, for which I apologise to Mr. Lees. The varieties *Georgina Pitcher*, *Mlle. Lawrence Zédé*, and *Madame G. Bruant*, although omitted from the list of fifty, are mentioned by this grower in a list of twenty new varieties, and when I made a comparison between the list of the best fifty and sixty varieties as given by Messrs. Lees and Wells I overlooked the separate class of the last named. "Mrs. J. J. Glennen" should read "Glessner," and "Dr. Ziebert" "Dr. Liebert" in my list of last week.—W. J. G.

[In an early issue we shall publish a list of the best "Chrysanthemums up to date" as determined by upwards of thirty leading growers and judges, who have opportunities for examining new as well as old varieties at the London or chief provincial shows.]

I SEE that Mr. Wells' selection of the best sixty Japs (page 624) comes in for some criticism at the hands of Mr. Godfrey in your last week's issue. It is almost impossible to select sixty varieties, each of which would be above criticism. Reference is also made to the best twenty-four Japs. I would select the following:—G. J. Warren, *Madame Carnot*, *Australian Gold*, *Phœbus*, *Edith Tabor*, *Ella Curtis*, *Georgina Pitcher*, *Simplicity*, *Mrs. H. Weeks*, *Mrs. J. Lewis*, *Lady Hanham*, *Chenon de Leché*, *C. Davis*, *V. Morel*, *E. Molyneux*, *Thomas Wilkins*, *G. W. Palmer*, *Australie*, *Royal Standard*, *Etoile de Lyon*, *Eva Knowles*, *J. Bidencope*, *Duke of York*, and *Lady Ridgway*. If the above were shown in good form I think neither *Modesto*, *Oceana*, *Western King*, nor *Lady Byron* would be good enough for comparison with them. *International* I would not grow.

Mr. Wells' selection of fifty incurved is also open to criticism. He does not think either *Miss D. Foster* or *Miss V. Foster* worth a place. Both these varieties were sent out last year, and were shown on all the leading stands throughout the kingdom—viz., first twenty-four Southampton, first twenty-four Portsmouth, first twenty-four Birmingham, first twenty-four Aquarium, first thirty-six Aquarium, first twelve incurved novelties (Mr. Wells' own stand), and first at Winchester, not to mention others.

Mr. Molyneux, writing in the *Journal* (see page 420), says, "Both these varieties possess all the characteristics needful to make sterling exhibition varieties," and yet Mr. Wells ignores them both, but includes five of the Teck family in his selection. Surely some explanation should be forthcoming.—F. G. FOSTER.

PRESENTATION TO MR. J. W. WILKINSON.

THE popular Secretary of the Royal Aquarium, Mr. James Watson Wilkinson, who is about to be married to Miss Frances W. Blacklaws, was (last week) at the Westminster Palace Hotel presented by Mr. Sheriff Dewar, on behalf of the subscribers, with a purse of £100 and an illuminated address. Mr. R. Dean, who presided, said that Mr. Wilkinson had been associated with the Royal Aquarium from its foundation, and he, like the other subscribers, had good reason to believe that much of the success which had been achieved of recent years was due to the esteemed Secretary's energetic discharge of his duties. Mr. C. E. Field then read the address, which was in the following terms:—"This tribute of esteem, together with a purse of sovereigns, is presented to Mr. J. W. Wilkinson by a few friends on the occasion of his marriage, with the warmest good wishes for his future happiness and continued prosperity, and also in recognition of his many kind qualities and courtesy always evinced in both business and social life." Votes of thanks to the officials who had

organised the testimonial brought the proceedings to a fitting close. The Committee consisted of Messrs. C. J. Noble, H. Cheesman, C. E. Field, L. del Bono, J. Mortimer Dudman, James Willing, jun., A. T. Cates, R. Dean, R. Ballantine, H. J. Jones, H. W. Wieland, G. C. Fricker, and W. A. Holmes.—J. C. (from the "Daily Chronicle").

THE N.C.S. AND THE R.A.

AN incident occurred last week that has no doubt been observed by the members of the N.C.S. generally, which helps materially, were it needed, to throw additional light on the close relations which exist between the officials of the Royal Aquarium and certain leaders of the N.C.S. Surely, henceforth, after this display of *arcades ambo*, the motto of these joint personages must be *par nobile fratrum*. I observed that over a festive board at which Mr. Wilkinson, the Secretary of the R.A., was the guest, Mr. R. Dean, Secretary to the N.C.S., presided, and he was supported, so it is reported in the papers, by Mr. R. Ballantine, Mr. H. J. Jones, and Mr. W. A. Holmes. I notice that the names of the Chairmen of the Executive Committee and the Floral Committee were absent. I trust the officials present at that festive board were there as friends and supporters of the R.A., and not as representatives of the N.C.S., though the Chrysanthemum community will naturally think they were the delegates of the Society.

In such a phase of the subject we see here illustrated how the old Hackney Society clings to the so-called "National." The term is a distressing misnomer. Were the Society termed the Royal Aquarium Chrysanthemum Appendage then would it be fitly named. Readers will not fail to notice amongst the persons reported as being present at this gathering one whose name as a prospective Secretary has been referred to. Without a doubt there is an intention to get this youth into the office of Secretary later, if the members of the N.C.S. are so weak as to allow themselves to be overborne by a name. No greater mistake could be made were this fatal policy carried out.

What is needed in the N.C.S. officials is freedom from old associations, capacity to manage on independent lines prescribed by the Committee, and a firm resolution to make the National Society worthy of its appellation. To maintain it as an appendage of the R.A., such as it now is, is to degrade it beyond all the degradations our glorious profession of horticulture has ever experienced. What is to be done? There are two courses. Every member of the N.C.S. who detests existing arrangements can attend at the annual general meeting and vote against the re-election of every R.A. supporter and apologist; or every such member can withdraw from the Society and proceed to form a new one truly national in its aims and objects. To aid this end the National Amateur Gardeners' Association should present a formidable force. There must be either mending or ending, for, as Mr. Moorman suggests, the present position is intolerable.—A MEMBER.

THE RESCUE OF THE N.C.S.

PRIOR to the disclosures of the Secretary, as elicited and recorded by Mr. Moorman, few persons could have imagined that what was universally supposed to be the strongest of our special floral societies is in its present deplorable condition.

Hundreds of persons at home and abroad who contribute to the funds, under the impression that the Society is strong and independent, must have been startled by the Secretary's statement, that it could not exist without the Aquarium. What a confession of impotence on the part of the N.C.S. Committee, of which the paid Honorary Secretary is of course the exponent!

It is due to this official to say that he has the courage of his convictions, for so certain is he of the inability of the Society to stand alone, that he has threatened to resign if a separation is effected between this "National" Society and the smoking, dancing, drinking, and home of amusement building to which it is enchained.

After the enormous sums of money which have been contributed by members over a period of years, and the scores of thousands of shillings which must have been paid by visitors to the several shows, if the disclosures and admissions of the Secretary, emphasised by his notification of resignation if the Society ventures to stand alone—if all this does not amount to an impeachment of the Chairman and Committee for incapacity in management, it would be interesting to know what it really does mean.

It must never be forgotten that the Secretary is not responsible for the existing state of things. The Committee is responsible. It cannot be supposed for a moment that the members of this Committee are other than earnest honourable men, who give their time gratuitously in furthering the objects which the Society was established to promote. But the best of men, or men with the best of intentions, are not always the strongest men. We may applaud them for their good intentions, but if they allow themselves to be misled, or their functions usurped and policy dictated by some more pushful personality, they are all the same responsible for the results.

Are the members of the Committee of the so-called "National" Chrysanthemum Society, and its Chairman, who occupies an important and responsible position in the horticultural world, satisfied with the Society's present condition and subservient connection? If so, let them say so, and clear the air. If they are not masters of the Society, as "On-looker" suggested on page 39, but mastered, there are absolutely only two legitimate alternatives—resignation, or the removal of any obstacle of an obstructive character.

The policy of the past has confessedly been a policy of failure. The Society, as its leading official has told us, is not independent—it cannot stand without the "crutch." Clearly, if it is to prosper in the future, and

be worthy of its name in the estimation of the world, there must either be a change of policy or a change of men. Nor is there much time to wait, for all who have eyes to see must perforce observe that the glory of the Society is departing. On the Committee rests the responsibility. —A PROVINCIAL SECRETARY.

[Communications on this N.C.S. subject are so numerous that we cannot possibly insert the whole of them. We have chosen those which appeared to present the case in different aspects; but not one letter has been excluded which was in the slightest degree favourable to the policy of the N.C.S. Committee, and of the alliance of the Society with the Royal Aquarium. Among the communications standing over, at least one writer so admirably, judiciously and dispassionately deals with the whole question, that his letter (and perhaps another or two if they proceed on new lines) will be published next week; and then we think our readers will agree that the question at issue has been placed with tolerable fulness and clearness before the Chrysanthemum world.]

AN INTERNATIONAL CHRYSANTHEMUM AUDIT IN FRANCE.

SOME of my friends of the N.C.S. will remember being asked to take part in an audit of the best fifty Chrysanthemums, which was organised by the Editor of the "Moniteur d'Horticulture" (France). The result has recently been published, and it appears that the audit is a most cosmopolitan one, for voters living in France, England, America, Belgium, Switzerland, Italy, Portugal, Austria, Greece, Tunis, Germany, Spain, Turkey, Roumania, and Monaco have sent in returns. One thousand and fifty-seven persons have taken part in the audit, and it is a remarkable testimony to the value of Madame Carnot that 1011 votes should have been recorded in its favour. The following are the names, with the number of votes recorded for the best fifty varieties:—

VARIETIES.		VOTES.	VOTES.	
Mme. Carnot ...	...	1011	Florence Davis ...	603
Le Colosse Grenoblois ...	...	997	Mme. Marius Ricoud ...	593
Mrs. C. Harman Payne... ..	...	994	Niveus ...	584
Mme. Ed. Roger ...	...	976	Wm. Falconer ...	578
Vivian Morel ...	...	971	E. Forgeot ...	561
Calvat's Australian Gold ...	...	895	Chas. Davis ...	558
Enfant des Deux Mondes ...	...	887	Philadelphia ...	557
W. H. Lincoln ...	...	876	Deuil de Jules Ferry ...	549
Hairy Wonder ...	...	809	Lilian B. Bird ...	539
Wm. Tricker ...	...	808	Duchess of York ...	532
Mme. Calvat ...	...	767	Louise ...	524
Etoile de Lyon ...	...	762	Capt. Lucien Chauré ...	503
Souvenir de Petite Amie ...	...	721	Le Mouchetotte ...	487
Col. W. B. Smith ...	...	706	Yellow Dragon ...	484
Mlle. Lucie Faure ...	...	701	Julian Hillpert ...	481
Reine d'Angleterre ...	...	689	Mme. Ph. Rivoire ...	463
Waban ...	...	682	Ma Perfection ...	442
M. Chenon de Leché ...	...	661	Henry Jacotot Fils ...	431
Louis Boehmer ...	...	660	Mme. Lucien Chauré ...	428
Amiral Avellan ...	...	643	Belle des Gordes ...	326
Edwin Molyneux ...	...	639	Eda Prass ...	421
L'Isère ...	...	631	Robert Owen ...	419
Mrs. Hy. Robinson ...	...	623	Mme. Chappuis Parent ...	427
N.C.S. Jubilee ...	...	614	The Queen ...	411
Phœbus ...	...	605	M. Panckoucke ...	408

—C. HARMAN PAYNE.

HONOURS FOR CHRYSANTHEMUM GROWERS.

ON the occasion of the Brussels Chrysanthemum Show M. Anatole Cordonnier, who was a very successful exhibitor in a class for 150 cut blooms, was appointed Chevalier of the Legion of Honour. We are pleased also to record that M. H. Fatzer, a well-known cultivator, and one of the first to grow big blooms in France, has just been appointed Chevalier of the Mérite Agricole. M. de Reydellet, the veteran seedling raiser, has also been the recipient of a like distinction.

CHRYSANTHEMUM SHOW AND CONGRESS AT LILLE.

WE are asked to give publicity to the fact that the Northern French Chrysanthemum Society will hold an International Show and Congress at Lille on the 10th of November next. Amateurs and nurserymen of all nationalities are invited to take part in the proceedings, which will be held in the Palais Rameau, a splendid building, well adapted for the purpose. The schedule will be published before long. Lille being only six hours distant from London, it is hoped by the Executive of the Society that English growers and amateurs will muster in strong force.—P.

MADAME CARNOT.

IN answer to the inquiry of "Lover of Flowers" respecting Chrysanthemum Madame Carnot, I adopted the following method last season with most satisfactory results, and better flowers could not have been wished for. The cuttings were rooted in December, and the plants steadily grown till the natural break occurred. From this break three shoots were selected, which were allowed to grow about 5 inches long, when the points were taken out of each of them. Other growths soon followed, and the next buds were secured during the third week in August. Some plants were topped in April and run on to the second crown; but the plants so treated did not produce such fine blooms as did those that were subjected to the treatment first mentioned.—H. S., Dorking.

ROYAL HORTICULTURAL SOCIETY.

THE COMMITTEES FOR 1898.

FULL particulars of the exhibitions of the Society can be had from the "Arrangements for 1898," in which are also given lists of the various Committees, and these we reprint for the benefit of our readers.

SCIENTIFIC COMMITTEE.

Chairman.—Sir J. D. Hooker, K.C.S.I., C.B., F.R.S., &c., The Camp, Sunningdale.

Vice-Chairmen.—Dyer, W. T. Thiselton, C.M.G., F.R.S., Royal Gardens, Kew; Foster, Professor M., Sec. R.S., Great Shelford, Cambridge; Masters, Maxwell T., M.D., F.R.S., &c., Mount Avenue, Ealing, W.

Hon. Secretary.—Rev. Prof. G. Henslow, M.A., F.L.S., Drayton House, Ealing, W.

Allen, J., Park House, Shepton Mallet.
Baker, J. G., F.R.S., Royal Gardens, Kew.
Balfour, Prof. I. B., F.R.S., Botanic Gardens, Edinburgh.
Bonavia, Dr. E., 5, Harrington Mansions, South Kensington.
Burbidge, F. W., M.A., F.L.S., Trinity College Gardens, Dublin.
Church, Prof. A. H., M.A., F.R.S., Shelsley, Kew Gardens.
Darwin, Francis, F.R.S., Wychfield, Huntingdon Road, Cambridge.
Dod, Rev. C. Wolley, Edge Hall, Malpas, Cheshire.
Elwes, H. J., F.L.S., F.Z.S., Colesborne, Andoversford, Glos.
Engleheart, Rev. G. H., M.A., Appleshaw, Andover.
Farmer, Prof. J. B., M.A., Royal College of Science, South Kensington.
Frankland, E., F.R.S., The Yews, Reigate Hill, Reigate.
Godman, F. DuCane, F.R.S., 10, Chandos Street, Cavendish Square.
Lindsay, R., Botanic Gardens, Edinburgh.
Llewelyn, Sir J. T. D., Bart., F.L.S., Penllergaer, Swansea.
Lynch, R. Irwin, A.L.S., Botanic Gardens, Cambridge.
Maxwell, W. H., Munches, Dalbeattie, N.B.
McLachlan, R., F.R.S., Westview, Clarendon Road, Lewisham, S.E.
Michael, A. D., F.L.S., Cadogan Mansions, Sloane Square, S.W.
Morris, D., C.M.G., M.A., F.L.S., D.Sc., 14, Cumberland Road, Kew.
Müller, Hugo, Ph.D., F.R.S., 13, Park Square East, Regent's Park.
Oliver, F. W., D.Sc., F.L.S., 10, Kew Gardens Road, Kew.
Plowright, C. B., F.L.S., 7, King Street, King's Lynn.
Russell, W. J., F.R.S., Ph.D., 34, Upper Hamilton Terrace, N.W.
Scott, D. H., M.A., Ph.D., F.R.S., F.L.S., The Old Palace, Richmond, S.W.
Sutton, A. W., F.L.S., Reading.
Veitch, H. J., F.L.S., King's Road, Chelsea, S.W.
Ward, Prof. Marshall, F.R.S., The Laurels, Englefield Green, Staines.
Wilson, Geo. F., F.R.S., Heatherbank, Weybridge Heath.

FRUIT AND VEGETABLE COMMITTEE.

Chairman.—Crowley, Philip, F.L.S., Waddon House, Croydon.

Vice-Chairmen.—Balderson, H., Corner Hall, Hemel Hempstead; Bunyard, Geo., The Royal Nurseries, Maidstone; Rivers, T. Francis, Sawbridgeworth.

Secretary.—Wilks, Rev. W., Shirley Vicarage, Croydon.

Barron, A. F., Sutton Court Road, Chiswick, W.
Bates, W., Poulett Lodge Gardens, Twickenham.
Bennett, W., Rangemore Park Gardens, Burton-on-Trent.
Cheal, Joseph, Crawley, Sussex.
Crumph, W., Madresfield Court Gardens, Malvern.
Cummins, G. W., The Grange Gardens, Wallington.
Dean, A., 62, Richmond Road, Kingston, S.W.
Divers, W. H., Belvoir Castle Gardens, Grantham.
Dunn, Malcolm, The Palace Gardens, Dalkeith, N.B.
Empson, W. J., Ampthill House Gardens, Beds.
Farr, W., Spring Grove House Gardens, Isleworth.
Fife, Robert, Dobbie's Nurseries, Orpington, Kent.
Gleeson, W., Warren House Gardens, Stanmore.
Herrin, C., Dropmore Gardens, Maidenhead.
Iggulden, W., North View, Frome, Somerset.
Laing, J., jun., Forest Hill, S.E.
Lane, Fred. Q., Berkhamsted.
McIndoe, James, Hutton Hall Gardens, Guisborough.
Miles, G. T., Wycomb Abbey, High Wycomb.
Norman, G., Hatfield House Gardens, Hatfield.
Parker, R., Goodwood, Chichester.
Pearson, A. H., The Nurseries, Chilwell, Notts.
Pope, W., Highclere Gardens, Newbury.
Poupart, W., Marsh Farm, Twickenham.
Reynolds, G., The Gardens, Gunnersbury Park, Acton.
Sage, G. H., Ham House Gardens, Richmond, S.W.
Saltmarsh, T. J., The Nurseries, Chelmsford.
Smith, James, The Gardens, Mentmore, Leighton Buzzard.
Veitch, J. H., King's Road, Chelsea.
Veitch, P. C. M., The Royal Nurseries, Exeter.
Ward, H. W., Lime House, Rayleigh, Essex.
Willard, Jesse, Holly Lodge Gardens, Highgate, N.
Woodward, G., Barham Court, Teston, Maidstone.
Wright, John, 8, Rose Hill Road, Wandsworth.
Wythes, G., Syon House Gardens, Brentford.

FLORAL COMMITTEE.

Chairman.—Marshall, William, Auchinraith, Bexley.

Vice-Chairmen.—Fraser, John, The Nurseries, South Woodford; Paul, George, The Old Nurseries, Cheshunt.

Secretary.—T. Humphreys, R.H.S. Gardens, Chiswick, W.

Bain, W., The Gardens, Burford Lodge, Dorking.
 Barnes, N. F., Eaton Gardens, Chester.
 Barr, W., 12, King Street, Covent Garden, W.C.
 Beckett, E., Aldenham House Gardens, Elstree.
 Blick, Chas., The Warren, Hayes Common, Beckenham.
 Cannell, H., Swanley, Kent.
 Cant, Cecil G., Colchester.
 Cook, E. T., 9, Fairlawn Grove, Chiswick.
 Crane, D. B., Archway Road, Highgate, N.
 Cutbush, H. J., The Nurseries, Highgate, N.
 Dean, R., Ranelagh Road, Ealing, W.
 Drnery, C. T., F.L.S., 25, Windsor Road, Forest Gate.
 Fitt, J. H., The Frythe Gardens, Welwyn.
 Fraser, John, Willow Cottages, Kew.
 Gordon, G., Endesleigh, Priory Park, Kew.
 Herbst, H., Kew Road, Richmond.
 Howe, W., Park Hill Gardens, Streatham Common.
 Jeffries, C., Boston House Gardens, Brentford.
 Jennings, J., Ascott Gardens, Leighton Buzzard.
 Jones, H. J., Ryecroft, Hither Green, Lewisham.
 Laing, J., Forest Hill, S.E.
 Lowe, R. B., Ashridge Gardens, Berkhamsted.
 McLeod, J., Dover House Gardens, Rochester.
 May, H. B., Dyson's Lane, Upper Edmonton.
 Mawley, E., Rosebank, Berkhamsted.
 Molyneux, E., Swanmore Park Gardens, Bishop's Waltham.
 Nicholson, G., Royal Gardens, Kew.
 Pawle, J. D., 12, Stanley Gardens, Willesden Green, N.W.
 Pearson, C. E., Chilwell, Nottingham.
 Peed, T., Roupell Park, West Norwood.
 Salter, C. J., Woodhatch Gardens, Reigate.
 Sanders, T. W., 124, Embleton Road, Lewisham.
 Selfe-Leonard, H., Hitherbury, Guildford.
 Stevens, Geo., St. John's Nursery, Putney.
 Thomas, Owen, Royal Gardens, Windsor.
 Turner, H., Royal Nurseries, Slough.
 Walker, J., Ham Common, Surrey.

ORCHID COMMITTEE.

Chairman.—Veitch, H. J., F.L.S., Royal Exotic Nursery, Chelsea, S.W.

Vice-Chairmen.—Courtauld, Sydney, Bocking Place, Braintree; Lawrence, Sir Trevor, Bart., 57, Prince's Gate, S.W.; Schröder, Baron, The Dell, Staines.

Hon. Sec.—O'Brien, James, West Street, Harrow-on-the-Hill.

Ashworth, E., Harefield Hall, Wilmslow, Cheshire.
 Ballantine, H., The Dell Gardens, Staines.
 Bond, T. W., Elstead House Gardens, Godalming.
 Brooman-White, R., Ardarroch, Garelochhead, N.B.
 Broome, Joseph, Sunny Hill, Llandudno.
 Burberry, H. A., Highbury Gardens, Birmingham.
 Chapman, H., Cambridge Lodge, Flodden Road, Camberwell.
 Cobb, W., Broadwater Down, Tunbridge Wells.
 Cookson, Norman C., Oakwood, Wylam-on-Tyne.
 Crawshay, De Barri, Rosefield, Sevenoaks.
 Douglas, James, Edenside, Great Bookham.
 Fowler, J. Gurney, Glebeland, Woodford.
 Gabriel, J. T., 32, Palace Road, Streatham Hill.
 Handley, Rev. E., 19, Royal Crescent, Bath.
 Hardy, Fred, Tyntesfield, Ashton-on-Mersey.
 Hill, E., Tring Park Gardens, Tring.
 Jacomb, F. C., Cheam Park, Surrey.
 Jaques, J., Waddesdon Manor Gardens, Aylesbury.
 Latham, W. B., Botanic Gardens, Edgbaston, Birmingham.
 Law-Schofield, G. W., New Hall Hey, Rawtenstall, Manchester.
 Little, H., Baronshalt, The Barons, E. Twickenham.
 Mason, Major, The Firs, Warwick.
 Pilcher, Charles, 84, Ringford Road, Wandsworth, S.W.
 Pollett, H. M., Fernside, Bickley, Kent.
 Protheroe, W. H., 67, Cheapside, E.C.
 Sander, F., St. Albans.
 Smee, A. H., Wallington, Surrey.
 Thompson, W., Walton Grange, Stone, Staffs.
 Thorne, F. J., The Gardens, Sunningdale Park.
 Warburton, A., Vine House, Haslingden.
 Watson, W., Royal Gardens, Kew.
 White, W. H., Burford Lodge Gardens, Dorking.
 Williams, H., Victoria Nurseries, Holloway, N.
 Winn, C., The Uplands, Selly Hill, near Birmingham.
 Young, W. H., Clare Lawn Gardens, East Sheen, S.W.

NARCISSUS COMMITTEE.

Chairman.—Bennett-Poë, John T., 29, Ashley Place, S.W.

Vice-Chairmen.—Baker, J. G., F.R.S., Royal Herbarium, Kew; Dod, Rev. C. Wolley, Edge Hall, Malpas, Cheshire; Engleheart, Rev. George H., Appleshaw, Andover.

Hon. Secretary.—Scrase-Dickins, C. R., Coolhurst Park, Horsham.

Barr, R., 12, King Street, Covent Garden, W.C.
 Boscawen, Hon. J., Tregyc, Perranwell.
 Bourne, Rev. S. E., Dunston Vicarage, Lincoln.
 Burbidge, F. W., M.A., Trinity College Gardens, Dublin.
 Cammell, G., Brookfield, Hathersage, near Sheffield.
 Cammell, M., Loxwood House, Billingshurst, Sussex.
 Cowan, C. W., Valleyfield, Penicuik, Midlothian.
 Foster, Prof. M., Sec. R.S., Shelford, Cambridge.
 De Graaff, S. A., Leyden, Holland.
 Goldring, W., 34, Gloucester Road, Kew.
 Kingsmill, A., Esq., The Holt, Harrow Weald, Stanmore.
 Krelage, J. H., Haarlem, Holland.
 Leichlin, Max, Baden-Baden.
 MacMichael, Rev. C., Walpole Rectory, Wisbech.
 Marsh, Rev. T. H., Cawston Rectory, Norfolk.
 Milne Readhead, R., Holden Clough, Bolton-by-Bowland, Clitheroe.
 Moore, F. W., Royal Botanic Gardens, Glasnevin, Dublin.
 Perry, Amos I., Hardy Plant Farm, Winchmore Hill, N.
 Smith, J. A. Dorien, Tresco Abbey, Scilly.
 Vilmorin, Henry L. De, Quai de la Mégisserie, Paris.
 Walker, James, Ham Common, Surrey.
 Ware, Walter T., Inglescombe Nurseries, near Bath.
 Wilks, Rev. W., Shirley Vicarage, Croydon.
 Willmott, Miss, Warley Place, Great Warley, Essex.

LIVERPOOL NOTES.

PUBLIC PARKS AND GARDENS.

At a meeting of the Liverpool City Council, held last week, Alderman Ball, Chairman of the Parks and Gardens Committee, stated that the estimates were the same as the previous year, but compared with those for six or seven years ago, they would notice that the expenditure to-day was much larger. No doubt the expenditure had increased, but the improved appearance of the parks, the public squares, the gardens and the churchyards, was most marked in comparison with the state of things prevailing six or seven years ago. In regard to the public parks, they had good management. Sefton Park was, doubtless, a feature of beauty, but the Committee had improved it materially, and he hoped the Council would provide them with still further means of doing so.

He was glad to say that the tubs containing shrubs, which had been placed in many streets, were a source of great pleasure to the inhabitants, while the introduction of window boxes in the poorer parts of the city had proved in every way successful. They brightened the homes of the poor. In this matter it was not the men they wanted to get hold, but their wives, who were thus led to take a keener interest in their dwellings.

During the past six years additional recreation grounds had been placed under their control, involving an increased expenditure of £3240 per year. They proposed to introduce into Sefton Park a deer park, which would be a source of great attraction to the young children. In Newsham and Stanley Parks great improvements had been made. In the former a bowling green and hut is to be formed, so as to attract the working men during the summer evenings; also a handsome fountain. In the latter a new bridge over one of the lakes, and the provision of a lake for the sailing of model yachts, a pleasure for which there was a great demand. Two aviaries are also to be formed.

Sir Thomas Hughes criticised the policy of the Committee as being extravagant, whilst Sir Arthur Forwood asked that the estimate of £25,000 be reduced by £3000. Ultimately he altered his amendment so as to reduce by £2250, this being carried by a large majority. In all fairness to the Committee it must be admitted that Liverpool has been greatly improved during the past few years in matters horticultural, and this is recognised by all visitors to the second city in the kingdom.

LIVERPOOL HORTICULTURAL ASSOCIATION.

On Saturday evening last the members and friends of the above Association to the number of over 130 met together at the Adelphi Hotel under the presidency of W. Fletcher Rogers, Esq., the Hon. Treasurer, the vice-chair being occupied by Mr. Thomas Foster, supported by Mr. J. Kellitt, C.C. In addition, there were present Messrs. Andrew Ker, H. Middlehurst, Charles Young, J. Webster (representing Messrs. T. Davies & Co.), Rowlands, H. Ranger (R. P. Ker & Sons), and other members of the trade, with Messrs. W. Dickson (Secretary) and G. Blackmore (sub-Treasurer). With the exception of the loyal toasts all others had been dispensed with. An excellent vocal entertainment was given. Mr. Kellitt, in a very happy speech, proposed a vote of thanks to Mr. Rogers, in which he spoke of the benefit derived by gardeners in their delightful study, and hoped that the Chairman would long lead such a willing body of workers. The Chairman, in reply, said that notwithstanding the many societies in their midst, he always hoped to see the Liverpool Horticultural Association at the head, and would ever be ready with his services. Votes of thanks to the artistes closed the proceedings.—R. P. R.

EELWORM DESTRUCTION.

BASIC SLAG AND KAINIT FOR CUCUMBERS AND TOMATOES.

YOUR correspondent "W. B.", on page 43, asks for less "bantering and boasting" and a little more "precise and clear information." Quite so, but why does he not set us a good example? I cannot find in my Journal that Mr. Abbey leads us to think that 12 ozs. of kainit and 2 lbs. of basic slag per square yard will "probably poison borders." "W. B." ought to read more carefully, and frame more precise and definite questions, if he wants clear information.

In answer to his inquiry, "Is it safe to plant Tomatoes and Cucumbers in borders as prepared?" we might ask, How have they been prepared? Have 12 ozs. of kainit and 2 lbs. of basic slag been applied to them? if so, who advised this amount for Cucumber borders?

If "W. B." has used the quantity of kainit and basic slag that I used in my Tomato borders, he may with safety plant his borders without any fear of injury from the compounds used. Last spring a dressing of 12 ozs. of kainit and 2 lbs. of basic slag per square yard was forked into the soil in a certain section of the house, and 200 Tomato plants were planted in the borders as soon as the digging was finished. These plants grew well and fruited excellently, the artificials having only a beneficial effect upon them. Still a few of the leaves drooped and died owing to an attack of sleepy disease fungus.

To be precise and clear I may, perhaps, be allowed to give more definite instruction. We spread 2 inches of decayed manure over the soil for Tomato borders, and then spread the basic slag and kainit on the top of this; the soil is then forked over carefully to a depth of 1 foot, mixing well together. It is necessary to do the work thoroughly, and to go to the required depth.

If we wish to mix the kainit and basic slag with the soil for our Cucumbers we must first find out about how much to use. Twelve ounces of kainit and 2 lbs. of basic slag per square yard, if forked into the top foot of soil, would be equal to mixing the artificial fertilisers with 900 lbs. of soil. This is not a very great deal after all, and I have mixed more of stronger artificials than the above in potting soil for Chrysanthemums, Pelargoniums, Cinerarias, and other plants. If "W. B." will mix the above quantity of kainit and basic slag with 900 lbs. of Cucumber soil he will find nothing but benefit follow. He must remember, however, that the blending must be complete, and that rough digging does not suffice, by which the dressings applied fall in small "heaps" between large cubes or "spits" of soil.—W. DYKE.

[An important communication by Mr. Iggulden on combating eelworms and supporting plants with soluble phenyle must perforce stand over till next week.]

A CURIOUS POTATO.

I SEND you a Potato which, I think, is a bit of a novelty. You will observe the young Potatoes are growing out of the old one.—W. BROWN.

[The prolific Potato sent by our correspondent is not such a novelty as he supposes, as it has been many times observed. It is none the less interesting, and as it is scarcely likely all our readers have seen it we furnish an illustration (fig. 11) of a precisely similar occurrence that came under our notice about seven years ago. As may be seen, the "new" Potatoes were not formed by or from the external buds or eyes, but formed in a cluster in the centre of the Potato, increased in size there, and forced their way through the dried cuticle. We assume they are the produce of latent buds on the growing axis that proceeds through the tubers from base to apex, and terminates in the buds by which the growth is continued the succeeding year; but these buds having become effete, the latent buds become active for perpetuating the kind. A portion of the old Potato was removed for showing the position of the young tubers.]

A DAY AT ALTRINCHAM.

WHEN recently visiting Messrs. Clibran's establishment at Altrincham, I was shown over their nurseries, which, at the present time, cover more than 200 acres. Glass houses alone occupy five acres, a casual look at which led one to think that everything is cultivated to the best advantage. Throughout the season there is always something of interest in the way of special exhibits, noteworthy at the time being two houses of admirably grown Cyclamens, the strain being free with flowers of great substance and variety. Chrysanthemums were just past their best, but the prizes awarded at the leading shows testify to the ability displayed by the firm to keep all up to date. Other plants having separate houses devoted to their wants were Begonias, Celosias, Carnations, Bouvardias, and Zonal Pelargoniums, whilst the stove and greenhouse departments take up a large number of houses, plants from the tiniest seedling upwards being in evidence everywhere.

Adjoining the glass houses many acres are devoted to hardy herbaceous plants and florist flowers, embracing old and new favourites, over an acre alone being occupied with the latest varieties of Pæonies, which make a gorgeous display when in bloom. Climbing plants in and out of pots are grown extensively, also many beautiful and uncommon plants suitable for wall and pillar decoration. Ascending the high ground near the nurseries one is struck by the very large number of specimen Hollies, averaging in height from 3 to 15 feet, and all of perfect symmetry. The work of

re-arranging is being carried on at intervals, and will, when completed, be a great boon to visitors; consequently the plants are always in a fit state for removal. Deciduous and ornamental trees are grown as nurses in single rows, each tree being a specimen ready for street, park, or avenue planting.

Thousands of Conifers, in splendid condition as regards colour and arrangement, are also grown. The plants are excellent in every respect. I was much struck by the care exercised in the rearing of the young trees and shrubs in open cases, to protect them from the cold winds and dry spring weather, which cause such destruction to plant life. The cases are really open frames, a slight covering of bracken being placed over the seedlings and cuttings in very severe weather, so as to prevent the frost from lifting them out of the ground.

In other sections I was astonished to see such enormous quantities of Laurels, Aucubas, named hybrids and other Rhododendrons from 12 inches to 4 and 5 feet in height, well shaped, and fit to suit the most exacting. Oval leaved Privet is grown most extensively from small hedge



FIG. 11.—A PROLIFEROUS POTATO.

plant size to large bushy specimens, for immediate effect. The Hale Farm Nurseries cover fifty acres. Forest trees, Larch, and an almost endless variety of Firs might be seen by the million, as well as the general kinds of trees for plantations and coverts. Hedge plants are a great item, one quantity of 250,000 quicks being very noticeable. In the fruit tree section there are over thirty acres planted, and trained trees of every form are highly creditable. Roses are represented by the 100,000, being grown in every position here as well as at the firm's large nursery at Llandudno, so as to get thoroughly tested, their appearance being most desirable.

Many plants have to be left without mention. The general features of the nurseries, situated as they are at various points around Altrincham, Bowdon, and Hale, afford to the visitor a pleasant treat. To those who have not had the pleasure, I advise a visit when in the district. An agreeable surprise will await them, and as foremen are to be found in each department, every facility is afforded to the visitor to look and learn. Landscape gardening seems to be a special feature, judging from the important contracts recently completed and others just taken in hand, from plans supplied by the firm.

Throughout the various nurseries there is much taste displayed in arranging the different kinds of trees in quantity so as to catch the eye, and although being well conversant with the majority of plants seen, I should be wanting in courtesy were I not to heartily thank Mr. Brown, the general manager of the nurseries, for his kind and agreeable company.—A VISITOR.

PRACTICAL ENCOURAGEMENT IN GARDENING.—We learn from a contemporary that at Llandulas, Wales, some time ago, Mr. A. L. Jones, a Liverpool merchant, distributed amongst the cottagers of the district several thousand young flowers and fruit trees, with a view to encouraging the growth of these. The matter was spiritedly taken up locally, and considerable attention is being given to flower growing, especially in the district.

FRUIT NOTES.

ADAMS' PEARMAIN APPLE.

THIS Apple should certainly find a place in every garden where dessert fruit is required. It is one of the most attractive of British Apples, and though the flesh and flavour are not equal to Cox's Orange or Ribston Pippin, it is useful, inasmuch as it will come in after these and many other kinds are over, and from January to March is its best season for eating. We have two trees, low standards, in the full sunshine, that annually furnish a crop, heavier some years than others, still when it attains a fair sized tree it is a constant bearer. The appearance of the fruit is good, which is an essential for the table. It should not be planted in the shade of other trees, otherwise it will be deficient in colour. Another essential point is that the fruiterers will always purchase good or fair samples of this Apple because they are attractive for the windows, and find a good retail sale.

NEC PLUS MEURIS PEAR.

This is another useful fruit for dessert purposes from January to March. Pears at this season are not always very plentiful. It is a second size fruit of a brownish colour, but the flavour, particularly after a fine autumn, is very fair. We have never found it crack as some late Pears do. The fruit buds set freely, and the fruit is generally picked about the end of October or first week in November. We have it as a low standard, and planted in the full sunshine. It annually produces a fair quantity of Pears, and some years is heavily laden. No doubt if grown on a wall the fruit would be better flavoured, most Pears are, and would be a useful addition for those who are short of Pears after the Christmas season is over.—A. HARDING, *Orton*.

POTATO DISEASE IN THE COUNTY COURT.

ONE of the most wonderfully arrived-at decisions that has come under my notice was achieved at the Bradford County Court recently. If it is to stand as a precedent it will be one of the most important that has ever been perpetrated in connection with the Potato trade. A Potato dealer sought to recover £11 7s. 6d. for Potatoes supplied to another, who refused to pay on the ground that they were diseased. The conditions of sale were the Potatoes were to be sold "on rail." The Judge found for the plaintiff on the ground that he was of opinion that "the substantial cause of the disease came after delivery at the station." The Judge is reported to have based his verdict on expert evidence; but surely he must have been peculiarly advised, or he took a different view of the advice than was intended, for the statements in the summary of the case, as reported in the "Mark Lane Express," are, to put it mildly, eccentric. There can be no doubt that the disease was ordinary Potato disease, "Phytophthora infestans." His Honour, in explanation, said, "the infection might be carried by a man who had been handling a bad Potato subsequently picking up a good one to look at it, and then putting it back in a pie, and the whole pie had been known to be destroyed in this way."

As to carrying infection, I do not object to that; but as to a whole pie being contaminated from one tuber, I flatly deny it, and am quite sure that this statement cannot be substantiated. There is no proof that the disease can be carried from tuber to tuber when dug; what is more, the evidence is against conidia being formed on tubers, and therefore germs cannot be given off to start it from tuber to tuber. It is equally certain that the mycelia, or root threads, in one tuber do not spread from tuber to tuber. If the spores of the disease happened to be resting on the other tubers, sweating would be sufficient to set up disease, as the warmth and the moisture settling on the tubers would be favourable to germination and subsequent growth. This is very common: and what is more, there is little doubt that it was from spores which settled on the tubers while being dug that the Potatoes in question suffered, particularly as the Judge himself stated a portion of the crop not sent away contained disease.

Another erroneous conclusion the Judge drew was that if the spores which were on the tubers at the time had begun to germinate, so as to effect them, it would have been visible. This is by no means the matter of course he said it was. The spores are so small that several thousands are required to reach an inch if laid alongside one another. Moreover, the disease is not noticeable to the naked eye until it has developed root threads, and they in their turn have brought about putrefaction, the rapidity of which is largely due to the temperature.

That fewer Potatoes among those which were left were diseased does not prove anything. If they were dug later in all probability the spores had fallen from the leaves, whereas at the time of digging they may have fallen directly on to the tubers. This is the common cause of after-disease, and one which anyone who has the slightest pretensions to a knowledge of the disease cannot fail to have become cognisant of. It might have been that the other Potatoes were dug on a drier day, or the skins may have become more hardened, and therefore more difficult for the germ to penetrate. His Honour, however, held it was more likely that the spores were carried on to the Potatoes after they were placed in the truck, having been wafted on the air. One knows that when Potato disease is rampant the air is largely charged with spores; but the farther from a diseased field the scarcer do they become. There are other points in connection with the judgment based on deductions from "scientific" evidence which are as strange as those dealt with here; it is not necessary, however, to go further to show how dangerous it is to

handle subjects on very limited knowledge. If the verdict is to be upheld in the future, it will be necessary for those dealing in Potatoes during the digging season to have them microscopically examined at the moment of delivery and acceptance; or some other Judge without a profound knowledge of fungal disease may make a verdict which will go to prove the old adage that a little knowledge is a very dangerous thing—but the Judge will not be the sufferer.—W. J. MALDEN (in "North Wales Chronicle.")

EQUAL PRIZES.

I QUITE agree with Mr. Beckett (page 17) when he says it is possible that two exhibits of a similar nature may be so absolutely equal as to necessitate an equal prize being awarded. It has been my lot on several occasions when assisting as judge at shows to award an equal prize.

In many instances vegetables, and especially Onions, Carrots, and Potatoes, have been of such equal merit on all points that we have felt it unfair to place the two exhibitors first and second, and the decision has generally met with the approval of the executive of the show, the exhibitors concerned, and the general public. It may often happen that the other exhibits in the same class are a great many points behind these first two, and when such is the case no second prize is awarded, but two firsts, and then a third; the money value of the first and second prize is added together and divided between the two equal firsts.

One instance occurs to my memory of a July show in one of our Fen towns, where vegetables are well grown, and are quite a feature of the exhibition. It was a class for "Six Onions, autumn sown." The variety in both cases was the Lemon Rocca. Both sixes in appearance and finish were exactly alike, and each bulb was minutely examined for any blemish, but there was none, and even when tested with a pair of scales they were found to be exactly the same weight. It really looked as if these two exhibits were from the same garden; but such was not the case, as we found out afterwards that the two exhibitors were old opponents in the art of showing well grown vegetables.—A. HARDING, *Orton*.

CALIFORNIAN EXPERIMENTS.

WE find from the report, by Mr. E. J. Wickson, of the Agricultural Experiment Station of the University of California, that 27,329 plants and roots were distributed during the past season. We also observe that attention has been widely called of late to the desirability of the Camphor tree (*Cinnamomum camphora*) for growth in California valleys and foothills either as an ornamental tree or as a possible source of profit for its timber and for the gum and oil which are derived from it by simple distilling processes. The Camphor tree was introduced to California at least twenty-five years ago, and was among the first plants distributed from the University. There is therefore at the present time ample demonstration of the hardiness, drouth-resistance, and beauty of the tree, and, so far as its growth is concerned, it is an eminently safe tree to plant for ornamental or forest purposes. Concerning profit to be derived from its planting we do not undertake to give assurance. The tree is a handsome, broad-leaved evergreen, attaining large size and noticeable by the characteristic light green of its foliage. It endures in California a temperature as low as 20° Fahr., and is probably about as hardy as the Olive. The report also contains the following notification:—

Plants for Green-Manuring.—We are still pursuing our effort to secure a leguminous plant which will prove satisfactory for green-manuring in California. As explained in earlier publications of the Station, it is necessary to have a plant which will make a heavy growth during the winter months, so that it can be ploughed in early in the spring and the ground put in shape for the thorough surface pulverisation which largely prevents evaporation of moisture during our long, dry summer. For this reason we cannot use many plants which are used for green-manuring in humid climates. Crimson Clover, Cow Peas, &c., do not make good winter growth. The square-pod Pea (*Lotus tetragonolobus*) is better, but still too scant in its winter growth. The common "Bur Clover" (*Medicago denticulata*) and its near relative "Snail Clover" (*M. turbinata*) are proving very satisfactory in some parts of the State, and the "Canadian Field Pea" is coming into quite wide use in some of the southern Citrus orchards. Experiments are also in progress with the native Lupins which may yield valuable results. We offer this year still another plant for trial, which we desire to have planted on a small scale in many localities to determine its hardiness and thrift under our winter conditions of heat and moisture—namely, Fenugreek (*Trigonella fenum-græcum*). This is an old plant of the Mediterranean region. It is of the Clover tribe; an annual which, under favourable conditions, produces a heavy weight of stem and foliage. It is used in the old countries for hay-flavouring; the seed also has aromatic quality and special uses in veterinary medicine. But it is rather for its possibilities in the green-manure line that we desire its trial, and this use is suggested by the report of the Director of the Botanical Service of Algeria and Tunis, which mentions a trial of Fenugreek sown in the autumn which produced by the 1st of the following March a weight of 25 tons per acre of green forage. The part of the field which was allowed to ripen produced about 1400 lbs. of seed per acre. We wish to determine by local trial whether the plant will endure our winter frosts, and, if so, whether its winter growth is greater than that of other legumes mentioned above. The availability of Snail Clover for green-manuring, especially in regions of abundant winter rains, has been approved by a number of experimenters during the last year.

ANTIRRHINUMS.

FEW hardy perennials are capable of being so readily raised from seed and flowered in so short a time as the Antirrhinum or Snapdragon. The dwarf varieties are eminently suitable for bedding and the taller for borders, where they will furnish spikes of bloom for cutting over a considerable period. The dwarf varieties, too, may also be employed for cutting when the plants are growing luxuriantly and flowering from every side shoot. Sutton's Tom Thumb strain is the best I have cultivated. Seed sown in March has produced plants which bloomed in July, not only profusely, but in admirable variety, distinct yellow, white, and crimson varieties being very conspicuous. There are also brilliant intermediate shades, the whole, when mixed and planted in one bed, producing a most effective display. It is possible to obtain the different colours separately in planting a bed, or any combination desired.

The present month or early in February is an excellent time for sowing the seed. A strong temperature is not essential. Prepare some light sandy compost consisting of old potting soil, a little fresh leaf soil and silver sand. Place this in a moist state in drained pans or shallow boxes, covering the drainage with damp moss or fibre. When the compost has been levelled and made firm, give a gentle watering with warm water. After draining freely sow the seed thinly. A dusting of fine sand over the surface will show where the seed falls. It is very small, and not easily distributed as thinly as desirable. Merely cover the seed from view by a layer of soil sifted through a fine sieve. Cover the pans or boxes with a pane of glass, and over that, paper to exclude light and lessen evaporation. Place them on a shelf in a warm greenhouse or other structure. No water should be needed or applied until the seed has germinated, but, better still, until the seedlings have become strong and established.

Plenty of light will soon effect this. The pans or boxes may then have a cooler position, but still abundance of light must be accorded them or they will quickly lengthen, at the same time weakening. This causes them to be liable to attack from the fungus which frequently infests the stems of various seedlings, but more especially when somewhat crowded. A sufficiency of air, light, and a healthfully moist condition of the soil are the chief requirements of the seedlings. Under these conditions, and having room to develop sturdily, it may not be requisite to prick them out to strengthen further. It will be better, however, to do so rather than crowding should be tolerated, as it is not desirable to plant out in the open before early in May.

Young plants just commencing to branch from the nodes may be planted 6 inches apart. At this stage they will be furnished with a number of fibrous roots, so there is no difficulty in establishing them permanently. Even in a still younger state, and the seedlings have experienced no crowding, they transplant well. Early sowing produces seedlings in time for pricking out in boxes or frames in order that each may assume a sturdy habit, and thus take advantage of the abundant space and rich root run to advance rapidly to a flowering state.

For general utility a bed of mixed colours will serve the most useful purpose, either for decoration or cutting. Admirable effects may be produced by planting small beds of one colour only, the dwarf or Tom Thumb being far preferable to any other, owing to its low and bushy habit of growth.

Varieties of intermediate and tall growth are suited to the mixed border, elevated and sloping banks, between and in front of shrubs, or in any position and soil where light is not denied them.

During the early stages of growth, while vacant spaces remain between the plants, the soil should be kept loose on the surface, especially when becoming dry after rain or artificial waterings. The Antirrhinum is a plant well adapted for a semi-shady but yet open position, as well as sunny aspects. The soil may be fairly rich and light, enriched with decayed manure or leaf soil.—S., *Gravesend*.

AUSTRALIAN FORESTRY.

THE increasing use of Australian timbers for wood-paving purposes has naturally directed attention to capabilities of the various colonies as permanent sources of supply, the general impression being that in this respect Western Australia takes the lead. This, however, is an erroneous assumption, for, according to Mr. Coghlan, the New South Wales Government Statistician, the Australian mother colony possesses a wealth of timber surpassed by only a few other countries. Its woods are as varied as they are valuable, ranging from the Ironbarks, unsurpassed for work requiring hardness and durability, to the kinds suitable for the most delicate specimens of the cabinetmaker's art.

Indiscriminate felling has, however, made several kinds comparatively rare, a frequent experience in newly settled countries, where the leading object of the pioneer residents is almost invariably to get rid of the timber on the lands occupied by them. The necessity of preserving the timber resources of the colony, and preventing the ruthless destruction of the best species of brush and hardwood which was being carried on, principally in the Clarence River district and in the Eucalyptus forests on the Murray, led the Government, in 1871, to establish a certain number of forest reserves throughout the colony, in which permission to cut timber, under certain conditions, should be granted upon payment of a fixed fee. Subsequently, in 1875, the office of Forest Ranger was created, and this led to the formation, in March, 1882, of a Forest Conservation Branch, which was attached to the Department of Mines.

Seven years later the colony was subdivided into a number of forest districts. These are frequently inspected by forest rangers, whose duty it is to report on the existing state of the proclaimed reserves, control the operations of licensed timber-getters, receive royalties on the various kinds of timber upon which such dues may be levied, and report upon applications to ringbark trees on Crown land, whether comprised in forest reserves or otherwise.

In view of the importance of the timber resources of the colony, the Hon. J. H. Carruthers, Minister for Lands, is preparing a bill, the main feature of which will be the establishment of permanent forestry reserves, where the timber can not only be used as it matures, but where steps can be taken to create a new supply to take the place of the trees which may be felled. This feature of the establishment of permanent reserves is, the Minister says, the chief matter to be considered, and it will apply mainly to the coastal forests, to the Red Gum forests on the Murray, and to the Ironbark forests all over the colony. With regard to the Pine forests, it is recognised that a different system will have to be adopted, because Pine is a timber of rapid growth, and, indeed, in many instances it is nothing more nor less than a noxious weed. In the meantime much has been already effected in the direction indicated.

During the last two years about 60,000 acres of Red Gum, 30,000 acres of Pine, and 2000 acres of coastal forests have been improved by thinning out and destroying the superabundant growths. This work has been carried out with the object of insuring the maturity of a larger number of trees to the acre, and, by reason of the additional light and air afforded, of their reaching that stage in about two-thirds of the time that would be taken under natural conditions. The cost of the thinning out operations averages 5s. 8d. per acre in the Red Gum areas, 4s. 6d. in the Pine areas, and 7s. in the coastal areas, and it is estimated that this outlay will return during the next twenty years two or three hundred marketable trees to the acre where the present unimproved average is but four or five. The Forest Conservation branch is charged with the direction of a State forest nursery, which is situated at Gosford, in the beautiful district of Brisbane Water, about fifty miles from Sydney, where the acclimatisation of valuable foreign timber trees, and the conservation of such of the best indigenous species as might otherwise be likely to disappear, are attended to. The area set apart for the nursery is 65 acres, of which 25 acres are cleared and cultivated.

Among the indigenous trees which are raised there may be mentioned Tallow-wood, Blackbutt, Beefwood, Silky Oak, Yellow Pine, the best varieties of Ironbark, and Red Cedar, the Red Cedar seedlings on hand at the close of 1895 numbering about 32,000. Of late, special attention has been paid to the cultivation of the White Mulberry, in expectation of a demand for this tree in consequence of the increased interest taken in the cultivation of silk in the colony. It is estimated that there are 28,000 Mulberry trees of different varieties, in various stages of growth, in the nursery, besides nearly 100,000 exotic trees of economic value. In addition to reforesting the Crown reserves with the best classes of timber, the State forest nursery distributes specimens among settlers in the sparsely timbered areas in the western district of the colony, and supplies them to municipalities, to the trustees of public reserves, and for the improvement of church and school lands and for other purposes.

Altogether, from 1890 to the end of 1896, over half a million plants were sent out of the nursery, the number for 1896 being 24,769, of which 11,120 were supplied to public bodies and private persons, and 13,649 were placed in reserves and other plantation areas. The number of merchantable plants remaining in the establishment on the 1st January, 1897, was estimated at 104,040—viz., 21,200 in pots, 17,100 seedlings in boxes, and 65,740 plants open-rooted. The consumption of Wattle bark is very great in this colony, where it is in large demand for tanning purposes. During 1895, 80,770 cwt. of Wattle bark were imported, valued at £19,634, nearly 68,000 cwt. of this supply being obtained from Tasmania. It will thus be readily seen that there is room for a large development of the trade in New South Wales. The department has taken steps to prevent the indiscriminate stripping of the bark, and the destruction of the trees, and thus stimulate the trade.—J. PLUMMER, *Sydney, N.S.W.*

THE YOUNG GARDENERS' DOMAIN.

CYCLAMENS.

FEW plants are better adapted for winter and spring decoration than varieties of *C. persicum*, and few plants produce such a profusion of flowers in return for the moderate amount of care required. The propagation of the Cyclamen is effected by seeds, which are never in better condition for sowing than when freshly gathered. An excellent time for sowing is at the end of July or beginning of August, when shallow pots or pans should be half filled with crocks, the compost consisting of light sandy soil. Scatter the seeds thinly and evenly on the surface, and then press it in and cover thinly, placing a piece of glass over the pan or pot. A temperature of 60° will be sufficient to insure germination, and when the seedlings appear they must be placed close to the glass in a light position. When large enough put singly in thumb pots, and keep like this in a similar temperature till spring, when they may be placed in 3-inch pots and grown in cool frames during the summer, admitting plenty of air after they are established.

Shading during bright sunshine and syringing on fine afternoons will be found advantageous. By June or July most of the pots will be filled with roots, and the corms will require pots 5 inches or 6 inches in diameter in which they will flower. Good drainage is very important, and deep

potting must be avoided, leaving the top of the corm, whence the flowers and leaves proceed, above the surface. Cyclamens are particularly subject to injury from green fly, red spider, thrips, and those pests should be frequently looked for. The after cultivation consists chiefly in keeping the plants in a light place close to the glass, admitting plenty of air but avoiding draughts.—J. H. C. S., *North Wales*.

FUNGUS PESTS.

THE worst pests that a gardener has to contend with in eradication are, in my opinion, the fungus pests. Red spider, thrips, and mealy bug are at times difficult to get rid of, I own, though, as a rule, they are successfully dealt with by syringing or sponging; but when we have fungoid enemies to contend with greater anxiety is entailed.

I think the most devastating invasion is that of the mildew which attacks Vines. This pest is so ravenous, as it were, in its attack, that unless speedily checked it soon destroys a whole crop of Grapes. It appears generally as very fine dust in patches, but when subjected to microscopic examination it presents a very different appearance. A rather high power is needed to define the separate parts of this fungus. It appears to be a collection of tiny plants, each complete in itself for the carrying out of its life's function. How astonishing it is that such tiny atoms should be endowed with such destructive power.

The rate at which mildew spreads is astonishing. We may see only a small patch one day, but a few days afterwards, if left to itself, it will have made such progress as to have almost covered a house of Vines. Such a case I have in my mind now. Yet when we remember that mildew is a great spore-producing plant, and that millions of spores when ripe float in the air, and are carried to different parts till a favourable spot is offered them for germination, we need not be surprised by the infestations.

All young men ought to know that mildews are parasitic plants, and that some forms live on the substances which should benefit the Vine. In such case the "host" has to supply food for the sustenance of hundreds, and sometimes thousands of plants, to its own serious detriment. Many and varied are the opinions given as to the inciting cause of mildew visitation. Some gardeners attribute it to dryness at the roots, others to stagnation of the soil, and still others to sharp chilling currents of air. It is prudent, therefore, to avoid, as far as possible, all these contingencies.

I am of opinion that the tiny spores travel great distances in the air, and are thus brought (in many instances) into contact with favourable mediums for germination. Chrysanthemums and Roses are often seriously infested with mildew, and often with disastrous consequences. In the case of Chrysanthemums the under surface of the leaves is usually attacked first, as though the enemy wished to get well established before being noticed, and where better protected against remedies applied for its destruction. I know of no better mildew destroyer on these plants than flowers of sulphur dusted over the affected parts.

A method I have seen adopted in vineries where mildew was prevalent was the placing of a small lump of fresh lime in a 24-size pot (the number of pots being determined by the size of the house), then damping it and sprinkling it with a little sulphur. Of course by damping the lime it became hot, which caused the fumes of the sulphur to rise, and I can say it proved very effectual. This method is less unsightly than painting the pipes, which in many cases is resorted to.

There are other minute fungi that play pranks with some of our most useful plants which will serve for a future article should this be inserted. I think young gardeners ought to study the minute forms of parasitic life with the aid of a microscope.—ASPIRANT.

TRADE CATALOGUES RECEIVED.

Austin & McAslan, Glasgow.—*Seeds*.
W. Clibran & Son, Altrincham.—*Seeds*.
W. Cutbush & Son, Highgate.—*Seeds*.
M. Cutbertson, Rothesay.—*Seeds and Plants*.
Dicksons & Co., Waterloo Place, Edinburgh.—*Seeds*.
W. Fell & Co., Hexham.—*Seeds*.
W. B. Hartland, Cork.—*Seeds*.
Hogg & Robertson, Mary Street, Dublin.—*Seeds*.
Kelway & Son, Langport.—*Gardening Manual*.
A. Lister & Son, Rothesay.—*Florists' Flowers*.
S. F. Richards, Ossett.—*Chrysanthemums*.
J. Sharpe & Son, Bardney.—*Seeds*.
B. Soddy, 243, Walworth Road, London.—*Seeds*.
R. Sydenham, Birmingham.—*Seeds*.
T. S. Ware, Hale Farm Nurseries, Tottenham.—*Seeds*.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. A. F. Barron, The Royal Gardeners' Orphan Fund, Chiswick, W.



FRUIT FORCING.

Cherry House.—No fruit tree dislikes a close stagnant atmosphere more than the Cherry, therefore ventilate early and increase the amount of air with the advancing day. Maintain a night temperature of 40°, no more, by artificial means in severe weather, 45° by day when dull and cold, 50° on mild or sunny days, ventilating at 50°, and allowing an advance to 60° or 65° from sun heat with full ventilation, closing at 50°. Syringe the house and trees in the morning and afternoon when the weather is bright, damping occasionally in dull. Trees in pots must have the necessary care in watering.

Cucumbers.—Young plants must be shifted into larger pots when they require more room, keeping them near the glass, and putting a stick to those required for trellis work. Winter fruiting plants will need surface dressings occasionally to keep them healthy, and any that exhibit signs of exhaustion will be assisted by fresh material supplied in place of as much of the surface soil as can be removed without injury to the roots, using turfy loam and a fourth of well-decayed manure, sprinkling a little fertiliser on the top. Such surface dressings incite the emission of roots, and when these are plentiful the plants can be invigorated by copious supplies of liquid manure. Keep the growths tied to the trellis, cut out exhausted parts, and tie in young shoots so as to maintain a succession of bearing wood, and consequently of fruit. Afford each growth space for development, all the foliage full exposure to light, and above all avoid overcropping.

Melons.—Plants raised early in the month are in the second leaf, and root action proceeding rapidly; therefore attend to earthing, and where the small pots are occupied with roots, either turn the plant into the fruiting quarters or transfer to the next larger size of pot, for stunted, root-bound plants never do any good. Plunge in bottom heat near the glass, a temperature of 75° to 80° being sufficient, placing a stick to each plant for its support till reaching the trellis. Plants for pits and frames can be stopped at the second rough leaf.

Soil for Melons.—Heavy loam suits Melons, the top 3 inches of a pasture cut and stacked in the autumn, chopped up moderately small, being the most suitable. An addition of manure can be made as desired, also of lime rubbish and road scrapings, when there is a deficiency of calcareous matter or of grit. If there is a suspicion of eelworm, scald with boiling water; it kills these and all other pests that feed on the Melons, either at the roots or on the tops. We have found this simple precaution very satisfactory.

Planting in Pits and Frames.—The bed must be made up about a week in advance of the stock being fit to plant out, employing thoroughly sweetened materials, put together compactly. Place a barrowful of soil in the centre of each light, flatten the top, this being about 9 inches from the glass, and the soil 10 inches deep. When warmed through place a plant in the centre of each hillock, press the soil firmly around the roots, keeping about half an inch below the seed leaves, and having the soil in the bed and pot moist, to prevent the need of water at planting. A circle of quicklime or dry soot drawn around each plant a little way from the stem will absorb superfluous moisture and be a barrier against slugs.

Peaches and Nectarines.—*Earliest Forced Trees.*—Continue the fertilising of the flowers as succeeding ones expand and the pollen becomes ripe, distributing it over the stigmas, which is more effectual than shaking the trellis. Syringing may be resorted to both morning and afternoon when the fruit is well set, but in dull weather damping will be sufficient, and in cold weather syringe sufficiently early to allow the foliage to become dry some time before nightfall. This is important, for keeping the trees constantly dripping with water encourages soft growth, is inimical to the leaves and swelling of the fruit, besides inducing gum. Water used for syringing must be of the same temperature as the house. Ascertain the condition of inside borders, and where necessary afford a proper supply of water. Disbud very carefully at this early season, removing a few growths daily from a tree preferably to many at distant intervals. The latter practice gives a check to the roots, and promotes wood growth at the expense of the fruit, which for lack of assimilated matter often falls at this juncture in consequence of sap congestion. Maintain the night temperature at 55°, 60° on mild nights, 60° to 65° by day artificially, 5° less on those figures when the weather is severe and dull. Ventilate early, admitting a little air at 65°, not allowing an advance over 70° without full ventilation, closing at 65°, always excepting a small space at the top of the house left constantly; this prevents a vitiated atmosphere, and secures a healthy condition in the leaves, which enables them to do better and more work in the daytime.

Second Early Forced Houses.—Trees started at the beginning of the month are expanding their flowers, and before they open it is well to make a close scrutiny of the trees, and if any aphides are found fumigate to exterminate the pests. Great care is necessary in fumigating, as the organs of fructification are easily and irreparably injured. Moderate fumigation or vapourisation on two or three consecutive evenings will be sufficient, for keeping insects in check until the fruit is set. Where there

is an excess of blossom buds draw the hand the contrary way of the growth along the under side of the trellis or its back so as to remove those there situated, thinning elsewhere with the fingers, leaving the best situated. Syringing must cease when the buds show colour; but damp the house in the morning and early afternoon, always avoiding a stagnant atmosphere. See that inside borders are thoroughly moistened through to the drainage, but avoid needless waterings.

Succession and Late Houses.—Finish pruning the trees at once, dressing them with an approved insecticide, many excellent kinds being advertised; and secure the trees to the trellis, always allowing ample space for the swelling of the branches, and leave room between them for laying-in young wood for future bearing. Fork the border lightly, not disturbing the roots; and after removing the loose soil, supplying fresh in its place, dress with a sustaining fertiliser, such as the following mixture:—Dissolved bones, dry and crumbly, three parts; double sulphate of potash and magnesia, two parts; and air-slaked best chalk lime, one part, mixed, using 4 ozs. per square yard, and scratch in lightly with a fork. If the borders are at all dry they should be given a thorough supply of water. Ventilate to the fullest extent, except when frost prevails; even then frost will not do any harm until the buds show colour. Houses with the roof-lights off need not have them replaced until starting time, or to insure safety for the blossoms.

THE KITCHEN GARDEN.

Forcing Carrots and Radishes.—Carrots are easily forced, and the roots in a young state form an excellent dish. A mild hotbed surmounted by a shallow frame or placed in a shallow pit is an essential. Cover this with about 6 inches of fine sandy soil in which to sow the seeds. The early stump-rooted or Forcing Horn Carrots are the best for the purpose, and the seed may be sown either broadcast or in drills. If broadcast, moisten the soil, if at all dry, and then sow on the surface thinly to obviate any necessity for thinning out. Do not attempt to rake in the seed, but cover with a little fine soil. Should sowing in lines be preferred, open shallow drills from 6 inches to 8 inches apart, the latter distance for Radishes between, water the drills and then sow the seed thinly along them, lightly covering with fine soil. Close the frame and cover heavily with mats till the seed germinates, after which admit all the light possible, and give a little air at the back of the frame during the warmest part of the day, ventilating more freely as the weather gets warmer and the plants increase in size. A similar system may be advantageously adopted with Radishes.

Carrots and Radishes in Rough Frames.—Profitable early crops of Carrots and Radishes can be grown without the aid of glazed lights. Rough frames can be easily constructed, and these can be made either deep enough to hold a depth of about 2 feet of manure, or manure and leaves, or they may be shallow and rest on the top of a hotbed. Canvas-covered frames, straw mats, or ordinary Russian mats are all suitable for covering and protecting. Prepare the seed bed and sow the seeds as is advised in the preceding paragraphs.

Radishes in the Open.—Should the weather keep mild the market growers' plan of sowing early Radishes in the open is worthy of imitation. Prepare a sunny slope by manuring heavily, and on this sow the seed somewhat freely in beds. Cover with strawy litter from which the manure has been separated, lightening this up occasionally with a fork. When the plants are up carefully remove the litter on mild days, returning it by way of protection in the evening. This small amount of labour is frequently rewarded by heavy and very remunerative crops of Radishes.

Forcing Potatoes.—Pot culture is seldom satisfactory, the crops resulting being light. Those who care to try this method of securing early dishes should half fill 9-inch pots with light moderately rich soil, and place one good-sized previously sprouted tuber of a short-topped early variety in each, or if 10-inch or larger pots are used two tubers may be set in each. Cover with soil, and arrange the pots in a moderately warm position, but hard forcing must not be attempted. When the single primary sprout left to each tuber is well through the surface nearly fill the pots with more of the light rich soil, and keep the pots where sunshine and air can reach them. Avoid saturating the soil at the outset, and also after top-dressing, but when the Potatoes are well in leaf they should have abundance of water, also soot water, or other liquid manure.

Potatoes in Frames.—Pits and frames are most often devoted to the production of early Potatoes. The former should be moderately deep, as the haulm requires a fair amount of head room. Bottom heat is needed, but this ought not to be of a dry or rank nature. If stable manure be used, it should be sweetened and moderated by previous fermentation and turnings of the heap, and is improved by the free addition of Oak or other leaves. A hotbed for Potatoes may be 3 feet deep at the back and 30 inches in front, putting it together firmly. If there is no likelihood of its becoming very hot, cover with about 9 inches of light moderately rich soil at once, and when this is well warmed through plant the Potatoes. Tubers having strong sprouts will be found excellent for this purpose. Drills for them may be 6 inches deep and about 15 inches apart, planting the tubers from 6 inches to 8 inches asunder, covering, and carefully levelling over the soil. Cover the frames or pits with mats every night, and heavily when the weather is frosty.

Early Peas and Beans.—Plants raised under glass and duly turned out in the open produce extra early, if not particularly heavy crops. If the seed is sown now it will germinate without the aid of much heat, and sturdier plants result than would be the case if they were raised in a strong heat. Raise abundance of plants, as they should be planted thickly in the rows. A quart of seed will give enough plants to form a row equal to a length of 90 feet. Sow the seed either somewhat thickly in 4-inch pots,

from which the plants may be moved with their roots undisturbed direct into the ground, or in boxes of light soil, eventually moving the plants in this instance without any soil, but saving the roots intact. If extra early dishes of Broad Beans are required sow seeds of Early Longpod, and treat as advised in the case of Peas.

THE BEE-KEEPER.

THE WEATHER.

BEE-KEEPERS as a body doubtless make observations of the weather more than the ordinary individual, and since my last notes appeared on this subject there have not been many changes to chronicle. We have had fogs, and a few slight frosts, the most severe being on the 23rd, 24th, and 25th of December, when 9°, 10°, and 11° respectively were registered. But generally speaking the weather has been mild and open. On several occasions the sun has shone brightly during the middle of the day, and bees were flying merrily from all the hives. This will be of benefit to them, as it keeps them in a healthy condition.

It is after cold rain, or a fall of snow, when the ground is exceedingly cold that bees die in great numbers becoming numbed directly they alight on the cold soil, where they become a ready prey for the birds, which are ever on the alert. Bees, if found in great numbers in this condition, may be brought to active life again if they are collected and placed in a box near the fire for a few minutes, and then liberated, when the majority of them will fly home to their various colonies. It is, however, not possible to do this on a large scale, but if attempted, should always be done as early as possible.

The open weather is having an effect on the early spring flowers. Already the Snowdrops, Aconites, Arabis, Primroses, and others are fast coming into bloom. So, whatever the weather may prove to be during the next few months, there has been nothing to complain of in this respect up to the present time.

BEES BREEDING IN WINTER.

Although brood in the hives is not to be encouraged in mid-winter, if healthy strong colonies were examined at the present time there would doubtless be found a patch of brood in two or three of the frames in the middle of the hive. It is not advisable to make an examination at this date, as much harm may be done. If the weather continue favourable the brood will prove of great advantage, as it will help to make the stocks strong.

When bees are provided with sufficient stores early in the autumn, so that no extra food is required during the winter or early spring, they rarely make the mistake of raising too much brood at midwinter. It is when bees are fed artificially, either with candy or in uncapping of sealed stores, that they become unnaturally excited; the weather may be fine and open, food is being supplied freely, but not wisely; the queen becomes excited and commences to lay, and all goes well for a few days. A change comes in the weather—a low temperature prevails, lasting a few days, or it may be weeks; the bees cling more closely to the cluster, and they are not numerous enough to cover the brood. What is the result? The brood becomes chilled, and so will many of the bees in their anxiety not to desert the brood; they succumb, being unable to return to the cluster, and so the last state of that colony is worse than the first.

This is no imagination. Similar cases to the above are being constantly brought to my notice, and should act as a deterrent to those who are inclined to neglect the autumn feeding (when necessary) of their bees, and relying on candy or something similar in winter instead. If the latter is given to the bees in reason at this season all will be well, but care must always be taken not to unduly excite the bees during the dark dull days of winter, or mischief will be done.

If the weather does not come unduly severe those stocks in warm hives with ample natural stores will continue breeding from this time onwards, and those are the colonies that will undoubtedly give the best account of themselves during the next honey harvest.

ENEMIES OF BEES.

Bees being constantly on the wing during fine weather, it is advisable to be on the look out for their enemies, and the worst culprit that I have to contend with in this respect is the different species of tits, the chief among them being the great tit (*Parus major*). If these pests were satisfied with being scavengers in picking up only the dead bees they would be welcomed as friends, but when they take them whilst on the wing, and when the temperature is too low for them to leave their hives, they pounce down on to the alighting board and tap at the entrance with their beaks so as to tempt some of the most venturesome of the bees to leave their hives, which they

invariably do by coming to the entrance to see what is the matter, when they are immediately seized by the tit and taken to the nearest tree and dissected. They repeat the operation continually. Very interesting to the on-looker, but rather trying to the nerves of the bee-keeper.

It is necessary to preserve the lives of as many of the bees as possible, so the tits are trapped with a small mouse trap baited with a piece of bread or meat, by which means they are readily taken. Tits are very numerous in the district, owing to the great expanse of woods near my apiary; so much is this the case that fifty of these birds are sometimes caught in a fortnight.

Sparrows are sometimes troublesome, but not to any serious extent; they usually catch the bees whilst on the wing. Mice are also troublesome, and may be caught by the same means. If mice once gain an entrance to a hive at this season they will soon destroy the combs and honey, and the bees will collapse. It is, therefore, an advantage to always have a few traps baited and placed near the hives throughout the winter months.—AN ENGLISH BEE-KEEPER.

A PROMISE FULFILLED.

ON page 21 "A Yorkshire Man" reminds me of a promise I made in this Journal some months ago, that, large and small hives should be tested in this district and the results made known. I am pleased to tell "A Yorkshire Man" that a careful test, both in my apiary and in others, proves large hives far in advance of those containing ten standard frames. In an apiary, about six miles from my home, containing a mixture of standard hives and hives containing twelve frames 18 by 8½ inches deep, and those containing twelve frames 20 inches by 8½ deep in each case, the large hives nearly doubled those of standard size in the surplus taken.

"A Yorkshire Man" says it would be interesting to know if I had reached the 350 lbs. mentioned in this Journal some time ago. To be candid, I have not; but I am pleased to tell "A Yorkshire Man" that 180 lbs. have been reached—that I consider fair for the past season, as there is no White Clover sown for sheep pasture within two miles of my apiary. But Mr. Lancelot Quayle, Isle of Man, took 334 lbs. from one hive. If the test mentioned above had been in one apiary only, there might have been room for doubt; but when apiaries from one mile to six miles apart in the hands of different men give the same results, it is clear the large hives are in predominance in this district.

Lest the readers of this Journal think I have had no experience with hives with standard frames, I may tell them I have over a score of such, and ten years ago it was my favourite hive. My best standard hive gave me nearly 70 lbs. of surplus last season, but required feeding, while my large hives required no feeding. This Journal opened my eyes as to the advisability of using large hives, and having tried the principle I have no desire to turn back. If "A Yorkshire Man" will pay me a visit in June (if not far away), I shall be pleased to see him; then he can have a peep into the hives, and then they will be able to speak for themselves.—GEORGE HOWDENSHERE.



All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

The Weather Plant (G.).—Though this plant is not commonly offered in catalogues, we do not think you will have much difficulty in procuring seeds. Firms of repute such as Veitch's, Barr's, Sutton's, or Carter's, would be almost certain to supply it.

Position for Vine Border (A. B.).—We presume your object is to train the Vines up one side of the roof and down the other of the span-roof house which stands east and west. This can very well be done. Have the outside border on the south side. You do not ask for information on making the border. If you need any read carefully the sound article of "Vitis" (who is an accomplished Grape grower) on page 617 of our issue of December 30th, 1897.

Holboellia latifolia (J. P., Devon).—The fruit sent is that of Holboellia (or Stauntonia) latifolia, a Berberidaceous plant, introduced from Nepaul in 1816. Hardy against walls in the South of England. The fruits, which have a general resemblance to those of Passiflora edulis, are eaten by the natives of Nepaul. The pulp is sweetish, yet more or less insipid. Those of Stauntonia hexaphylla are eaten in Japan, and the juice is also applied in cases of ophthalmia.

"Mites" on Vine Roots (T. P.).—Your Vines may possibly be suffering from an attack of Phylloxera. We cannot tell which without examining specimens of the fibrous roots to which you refer. Please search for and send specimens packed in damp moss in a small strong box on Friday or Monday next, so that they may not rest over Sunday in the Post Office. Many fragile paper boxes reach us in a smashed or flattened state; we ask that the one you use may not be of that character.

Propagating Variegated Aucubas (A. G. G.).—Healthy, short-jointed branchlets from 9 inches to a foot in length, more than half divested of leaves, deeply and firmly inserted in sandy soil, in a cool frame in September, kept close and shaded for a time, emit roots freely. We have seen many plants raised by inserting such cuttings in the open ground on the north side of a wall in August, sprinkling them occasionally if the weather be dry. They would root even now outside if the present mild weather continue, which, however, cannot be expected. The cuttings may also be rooted at this time of the year in pots in a warm pit or propagating case, the pots being plunged in gentle bottom heat.

Planting Box (G. A. B.).—In planting Box for edgings it is essential that the ground be made very firm and quite level, then stretch the line, keeping it firm with pegs, and take out a trench, the side next the line being perpendicular; arrange the slips in it close together and level, holding them in position with one hand while the soil is beaten firmly against them with the other, then fill in with the rake or spade, and tread the ground along both sides the row, which, when completed, may be 2 inches above the walk. If no rooted portions can be had it will be well to take off a number of rootless slips and lay them thickly and deeply in the ground in a position shaded from the sun in summer, and they will emit roots and be ready for planting in the autumn. Rooted portions may be planted now if the weather is favourable, or in the spring, the earlier the better.

Stocks for Roses and Fruit Trees (New Reader).—The Manetti stock is an Italian Briar of very free growth, hardy in this country, and increased by cuttings inserted in the open ground in the autumn. English Briar stocks for dwarf Roses are raised in the same way, also from seed. Before the cuttings are inserted the buds are carefully removed except two or three at the top of each cutting, these alone being above ground. The cuttings are inserted slantingly in ridges, and when the stocks are large enough for budding the soil is levelled down and the buds inserted close to the ground, one in each stem, below the branching growths. Quince stocks are raised from cuttings on the same lines as described for Briars, also by layers. Pear and Crab stocks are obtained from pips or seeds of those fruits sown in the open ground. Many stocks for Apples, and known as "free" stocks, are raised from Apple pips obtained in the process of cider making. Paradise stocks are raised both by layers and cuttings of dwarf precocious kinds of Apples, which are grown for that purpose. They are not employed for Pears, but only for providing Apple trees of compact growth and early productiveness.

Making Grafting Wax (Amateur).—Several kinds require to be used warm, one of the simplest being equal parts of yellow wax and resin melted together and applied when cool enough. The following has not the inconvenience of requiring to be applied warm, and may be prepared and used without being heated:—Yellow wax 1 lb., turpentine 1 lb., Burgundy pitch 8 ozs., mutton suet 4 ozs. Mix all together, and mix thoroughly, and leave them to cool. Form the mass into small balls, as it will not stick to the fingers, and use them when opportunity offers. Liquid grafting wax is a very useful application, and is, perhaps, the most convenient for the purpose of all the mastics used for covering wounds and grafting. It is of the consistency of varnish, and is applied very thinly with a brush. Care must be taken not to lay it on thickly, for the surface hardens so rapidly the alcohol is prevented evaporating. Resin 1 lb., beef tallow 1 oz., spirits of turpentine one tablespoonful, alcohol (95 per cent.) 6 ozs. Melt the resin over a slow fire, when melted take it off and add the beef tallow, stirring it constantly; let it cool somewhat, mix the spirits of turpentine little by little with it, and at last the alcohol in the same way. Should the alcohol be added while the mass is too hot, much will be lost by rapid evaporation; if, on the contrary, it is too cool, it will form a viscid lump, and must be slightly heated again. Stirring briskly is indispensable to mix the ingredients thoroughly. In well-corked bottles it keeps for years. If in course of time it becomes too thick, the addition of some alcohol will make it liquid again. For this purpose it must always be warmed. It is a good plan to put the bottle containing it in boiling or hot water to accomplish this.

Grafting Aralias (*Twenty-five Years Subscriber*).—We have not heard that the elegant *Aralia Veitchii* is increased by grafting on *A. Sieboldii*, now called *Fatsia japonica*; but we know that many plants are established by grafting on stocks of *A. reticulata*, raised from cuttings of ripe, healthy wood, which root freely in gentle heat, while those of *A. Veitchii* do not. The stocks are established in small pots, the stems cut down to within an inch or two of the soil, and the scions 2 or 3 inches long, neatly attached by splice or cleft grafting, made secure, and air excluded by grafting wax. The pots are plunged in cocoa-nut fibre refuse in a close case or under a hand-light, in a temperature of 70° to 75°, and gentle bottom heat is advantageous. Possibly the scions might "take" on young stocks of *Fatsia*, or on pieces of root with fibre attached, though we have not seen *A. Veitchii* so increased; but we have seen hundreds of plants established on the narrow-leaved *A. reticulata*. *A. Scheffleri*, a New Zealand species, is also said to be suitable for the same purpose.

Gas Liquor (*H. J. B.*).—This must be used very carefully, and highly diluted with water. For vegetables it may be used at strengths corresponding to the vigour of the plants, about 1 pint to a 3-gallon water-potful of water being quite strong enough when it is used over the foliage, and in some cases it will brown the plants at that ratio, not only because the foliage differs in hardness, but through the variability of the strength of the gas liquor. For pouring between the rows of growing crops it need only be diluted with six times the quantity of water, and is valuable for all the Brassica tribe and Peas, taking care not to apply it to their stems. For fruit trees it should be diluted with ten times the quantity of water, and be applied during the swelling of their crops, preferably in the first half of their swelling, as given late it has a tendency to induce late growths. It will benefit every kind of plant that needs support, only take care to supply it weak, and to pour it clear of their foliage. It, however, requires to be used with care, as an overdose is fatal.

Poinsettias Losing their Leaves (*J. H.*).—The leaves always turn yellow and drop off after the plants have been in beauty for some time; but the change and casting of the foliage is accelerated by the checks the plants have received by sudden changes of temperature or extreme dryness of the roots even if only for a few hours. Continue watering them regularly as long as the bracts remain fresh and bright, then gradually withhold water until the soil is quite dry. After a few weeks of rest the plants may be cut down, the growths being made into cuttings and inserted in sand, one joint below and one eye just above the surface. If the pots are placed in heat these cuttings will emit roots, and with good culture form fine plants during the season; cuttings of the young shoots (that are produced if the plants are not cut down) root freely if inserted when 3 inches long and placed in brisk moist heat and shaded so as to prevent flagging. The old cut-down plants, when they have made half an inch of fresh growth, should be shaken out of the pots and be repotted in fresh soil, and if properly treated they will produce large heads of brilliant bracts by next Christmas.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. *Dessert Pears cannot be named in a hard green state.* (*A. R.*).—The Apple is not the short-stalked *Hanwell Souring*, nor are we quite sure what it is. It possesses most of the characters of Dutch Mignonne, but in quality is not equal to that variety in its normal state. (*D. E. H.*).—1, Northern Greening; 2, a local seedling; the Pear is Brown Beurré.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*F. F.*).—1, *Selaginella Kraussiana variegata*; 2, *Adiantum pubescens*; 3, *Maxillaria nigrescens*; 4, *Selaginella Martensi*. (*E. M. E.*).—1, *Odontoglossum Cervantesi decorum*; 2, a good form of *Sophronis grandiflora*; 3, *Masdevallia polysticha*; 4, *Lælia anceps*, poor variety; 5, *Selaginella cæsia*; 6, *S. involvens*. (*I. F. E.*).—1, *Asplenium cicutarium*; 2, *Lomaria discolor*; 3, *Cypripedium venustum*. (*C. O. P.*).—1, *Cypripedium insigne Maulei*; 2, *Lælia anceps*. (*P. J. R.*).—1, *Adiantum gracillimum*; 2, *Nephrolepis exaltata*; 3, *Asplenium bulbiferum*; 4, *Pteris serrulata*; 5, *P. cretica*; 6, *P. serrulata cristata*.

COVENT GARDEN MARKET.—JAN. 19TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1	6 to 4	0	Grapes, lb....	0 8 to 2 0
Cobs ...	22	6	24	Lemons, case ...	11 0 14 0
Filberts, 100 lbs. ...	0	0	0	St. Michael's Pines, each	2 6 5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0	0 to 0	0	Mustard and Cress, punnet	0 2 to 0 4
Beans, $\frac{1}{2}$ sieve ...	0	0	0	Onions, bushel ...	3 6 4 0
Beet, Red, doz....	1	0	0	Parsley, doz. bnchs....	2 0 3 0
Carrots, bunch ...	0	3	0	Parsnips, doz. ...	1 0 0 0
Cauliflowers, doz. ...	2	0	3	Potatoes, cwt. ...	2 0 4 0
Celery, bundle ...	1	0	6	Salsafy, bundle...	1 0 0 0
Coleworts, doz. bnchs. ...	2	0	4	Scorzonera, bundle ...	1 6 0 0
Cucumbers... ..	0	4	0	Seakale, basket...	1 6 1 9
Endive, doz. ...	1	3	1	Shallots, lb. ...	0 3 0 4
Herbs, bunch ...	0	3	0	Spinach, pad ...	0 0 0 0
Leeks, bunch ...	0	2	0	Sprouts, $\frac{1}{2}$ sieve ...	1 6 1 9
Lettuce, doz. ...	1	3	0	Tomatoes, lb. ...	0 4 0 0
Musbrooms, lb....	0	6	0	Turnips, bunch...	0 3 0 0

PLANTS IN POTS.

		s. d.	s. d.			s. d.	s. d.			
Arbor Vitæ, var., doz.	...	6	0 to 36	0	Ferns, var., doz.	...	4 0 to 18 0			
Aspidistra, doz.	...	18	0	36	0	Ferns, small, 100	...	4 0	8 0	
Aspidistra, specimen	...	5	0	10	6	Ficus elastica, each...	...	1	0	7 0
Azalea, per doz.	...	30	0	42	0	Foliage plants, var., each	...	1	0	5 0
Chrysanthemums, doz.	...	4	0	9	0	Hyacinths, doz. pots	...	8	0	12 0
Cineraria, per doz.	...	9	0	15	0	Lilium Harrisii, doz....	...	12	0	18 0
Cyclamen, per doz	...	12	0	18	0	Lycopodiums, doz.	...	4	0	6 0
Dracæna, var., doz.	...	12	0	30	0	Marguerite Daisy, doz.	...	6	0	9 0
Dracæna viridis, doz.	...	9	0	18	0	Myrtles, doz.	...	6	0	9 0
Erica hyemalis, per doz	...	9	0	15	0	Palms, in var., each...	...	1	0	15 0
„ gracilis, per doz.	...	6	0	9	0	„ specimens	...	21	0	63 0
„ various, per doz.	...	8	0	12	0	Pelargoniums, scarlet, doz.	...	4	0	6 0
Euonymus, var., doz.	...	6	0	18	0	Tulips, various, doz. bulbs	...	0	9	1 6
Evergreens, var., doz.	...	4	0	18	0					

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2 0	to 4 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Arum Lilies, 12 blooms ...	3 0	5 0	Mimosa or Acacia, bunch		
Asparagus, Fern, bunch...	1 0	2 6	(French)	0 9	1 0
Azalea, dozen sprays ...	0 6	0 9	Narciss, white (French)		
Bouvardias, bunch ...	0 6	0 9	dozen bunches	2 6	4 0
Carnations, 12 blooms ...	1 0	3 0	Orchids, var., doz. blooms	1 6	12 0
Chrysanthemums, 12 bnchs.	4 0	15 0	Pelargoniums, doz. bnchs.	6 0	9 0
„ „ 12 blooms	1 0	4 0	Roses (indoor), doz....	0 6	1 0
Daffodils, doz. bunches ...	12 0	18 0	„ Tea, white, dozen ...	1 0	2 0
Eucharis, doz.	4 0	6 0	„ Yellow, doz. (Perles)	1 6	4 0
Gardenias, doz.... ..	3 0	6 0	„ Safrano (English) doz.	1 0	2 0
Geranium, scarlet, dozen			„ „ (French) per doz.	0 9	1 6
bunches	6 0	9 0	„ „ per 100...	5 0	7 0
Hyacinths (Roman) dozen			„ „ Pink, dozen	1 0	2 6
bunches... ..	0 9	1 0	Smilax, bunch	1 6	2 6
Lilac (French), bunch ...	3 0	4 0	Snowdrops, 12 bunches ...	1 0	2 0
Lilium longiflorum, 12 blms	4 0	6 0	Tuberose, 12 blooms ...	0 6	0 9
Lily of the Valley, 12 sprays	1 0	2 0	Tulips, dozen blooms ...	0 6	1 6
Maidenhair Fern, dozen			Violets, dozen bunches ...	1 6	2 0
bunches	4 0	8 0	„ Parme (French),		
Marguerites, doz. bunches	2 0	3 0	bunch	3 0	4 0



HOW THE MONEY GOES.

HAVING now got fairly into the swing of the work it would be well to inquire how the money allowed by Government to forward technical education in this country is being spent.

We have lately read of much good work being done on the Continent, particularly in the countries of Denmark, Norway and Sweden, and the question suggesting itself is this: Is Government doing as much for us in the way of education (technical) as these countries are doing for their people? We may take that question in two ways. First, Having now waked up to the fact of our great deficiencies, as compared to the rest of the continental countries, we are trying by great efforts to retrieve our past—i.e., that is by providing teachers and appliances. Secondly, we are rather defeating our own ends by our costly methods, and we do not attract the right sort of people for the training. We are helping to educate many who are in a position to educate themselves, and we only touch as it were the edge of the masses. As far as we can learn by reading, Sweden

is particularly fortunate in her class of pupils. She gets hold of the horny-handed sons of toil (and the daughters too), and gives them such help as will enable them to become scientific workers, each in his own sphere, and thus in the end, by practical object lessons, proving the best of teachers. Of course, we are now referring to matters purely agricultural.

We English are so fond of bricks and mortar. We like palatial residences, fine offices. We build for the future; but laudable as this may be, is there not a danger that we overdo the thing? Building operations are costly, they involve a large expenditure of capital, and it is a question as to whether the money can be really afforded.

Grand homes and model buildings are all very well for the pupil who comes of rich parents, but how about the small farmer or bailiff's sons? Will they not be rather out of love with their home surroundings? Perhaps this is a healthy form of discontent, but would not they be better fitted for their future work if they had not found everything made ready to their hand? We must bear in mind these poorer pupils will still be the employed, not the employers.

We will now turn to a few figures. We know figures are dull reading, but if carefully studied they convey concise information. Out of the sum of £588,000 spent on technical education, £78,000 was used in the various counties for instruction in agriculture—this is only about one-seventh of the whole; and it hardly seems fair, as in all the large centres of population technical work has received much attention in the past.

Nearly all the counties spend a considerable part of their grant in dairy work, either by the establishment and maintenance of dairy institutes, by a series of dairy classes (itinerant), or by providing money for scholarships at some of the many dairy institutes. It is interesting to read how the various counties apply their share of money. Buckinghamshire receives in gross the sum of £3794 for technical work, and out of that sum only a paltry £626 is applied exclusively to agriculture. Gloucestershire receives £13,000, and spends £540; part of this goes to pay an agricultural adviser. What that implies we hardly know, for a man of any talent would, we think, require the whole of the £540, but perhaps he is only an expert in one branch.

Does London, with her manifold advantages, require the £172,000 which falls to her share, and Middlesex takes £21,900? One would have thought that London's share might have included Middlesex. Some of the essentially agricultural counties must stand in need of a part of this great sum. £500 is spent in Northamptonshire principally on lectures. Well, unless the lectures are followed by examinations, or inspections of actual work, we doubt the good done is but fleeting. We are glad to see a certain amount of aid given to the brother science—viz., horticulture.

Northumberland having established an Agricultural College, naturally devotes a large portion of her share to the maintenance of that College, and most of us have heard of the Dairy Institute, near Nottingham, under Mr. Benson, which is doing such a good work, and which rightly absorbs a good deal of the Notts share. A splendidly equipped College is also provided at Wye for Kent and Surrey, and presumably much help is given to harassed Hop growers. Surrey is also well in advance—the pioneer county in teaching the young (the men of the future) by theoretical lessons in evening schools and practical lessons on the land—a hopeful combination. The amount for horticulture in the whole country is £8000, and no one will be surprised to hear that Kent takes the lion's share.

So much has been said on the poultry question, that if at any rate we sin now it is our own fault, for some of the best teachers that the country has ever produced are lecturing up and down the land.

Veterinary classes are popular, and do a good work when the lectures are delivered by the right men; by that, we mean men who impart knowledge in a pleasing and satisfactory manner. Devon rejoices in securing the services of an enthusiastic botanical agriculturist—a man with a great and deep knowledge of manures and their uses. His services, we believe, are given freely to the farmers who ask for and require them.

We are not always sure that the best instructors get into the country districts. It is often thought that anything will do for Hodge and his masters. Never was a greater mistake made. Cheap prosy men, however able to handle the spade or the plough, and dry didactic scientists cannot evoke interest and gain sympathetic response. The greater the need, the greater should be the care taken in selecting suitable and able men. That is where real genius comes in. A clever man can adapt himself so well to his audience; a second-class man not only loses his own head when faced by apparent stupidity, but also brings discredit on the cause that he advocates, and a succeeding lecturer must free the minds of his hearers from prejudice before ever he can hope to secure a hearing.

The scheme of technical instruction is yet in its infancy. We are now finding out the weak points in the system, and the thing will gradually right itself.

It is hard work teaching the middle-aged, and possibly, in the long run, that portion of money used in training the young and for the encouragement of the various agricultural seats of learning will be found to have been the best expended.

Note.—During the last year France voted £688,000, Germany £502,000, U.S. America £343,000, Great Britain £78,000! for agricultural instruction.

WORK ON THE HOME FARM.

With all the lea intended for Oats satisfactorily ploughed, and fallows not quite ready for working—or, rather, the season for such work having hardly yet arrived—we have to look for catch work to keep our horses in employment and health.

Grass land will always show a good return for the labour of carting road scrapings, or anything of like nature that can be had for the fetching. The highway authorities are usually only too glad to have any ridges by the side of the highways ploughed up and carted away, and will often find hands to fill the carts. Where limestone or slag has been used on the roads, the roadside refuse contains a considerable per-centage of lime, and will be found to encourage the growth of Clover in grass land. It should be well spread, and then chain-harrowed at once to insure evenness of distribution.

Turnips have almost outgrown their best qualities; we mean they have attained a size which not only is against their chances of resisting frost, but which makes them distinctly less valuable as food. We like large Turnips for autumn consumption, and Swedes can seldom be too large; but to stand a reasonable amount of frost and then be suitable food for the breeding flock, the size of the roots is strictly limited. For the use above mentioned we sow a little later and omit the close singling. We have found a cluster of three or four roots small in size much more hardy and useful than one large one after the new year has come in.

Though not advocating the extensive use of Turnips for ewes in autumn, we think that they may be freely given now until lambing commences; but always a due proportion of dry food must be given with them.

Now that cakes are so much dearer, dried grains or malt culms are desirable foods for ewes on account of their price as well as their dry nature, and are particularly good where grass is scarce and the sheep must be kept altogether on Turnips. A valuable manurial residue is left after the consumption of either of these foods.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.
1898. January.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
		Dry.	Wet.			Max.	Min.	In Sun	On Grass	
	inches	deg.	deg.		deg.	deg.	deg.	deg.	inches.	
Sunday 9	29.899	39.9	39.2	N. W.	41.5	41.3	38.8	46.2	35.1	—
Monday 10	30.233	37.4	35.9	N.	41.1	42.4	36.7	55.2	31.7	—
Tuesday 11	30.457	37.9	36.7	W.	39.3	46.1	29.2	51.4	26.9	—
Wednesday . . . 12	30.583	45.3	43.7	S. W.	40.0	49.2	37.5	52.1	35.7	—
Thursday . . . 13	30.651	45.7	45.6	N. E.	41.9	48.4	44.8	50.1	42.1	—
Friday 14	30.486	43.3	40.8	N. E.	42.2	43.6	42.8	46.8	38.8	—
Saturday 15	30.614	42.3	39.6	E.	41.9	42.6	41.1	46.3	39.1	—
	30.418	41.7	40.2		41.1	44.8	38.7	49.7	35.6	—

9th.—Fine, but sunless.

10th.—Fine early, generally sunny from 11 A.M.; clear night.

11th.—Overcast early; generally sunny from 11.30 A.M.; clear night.

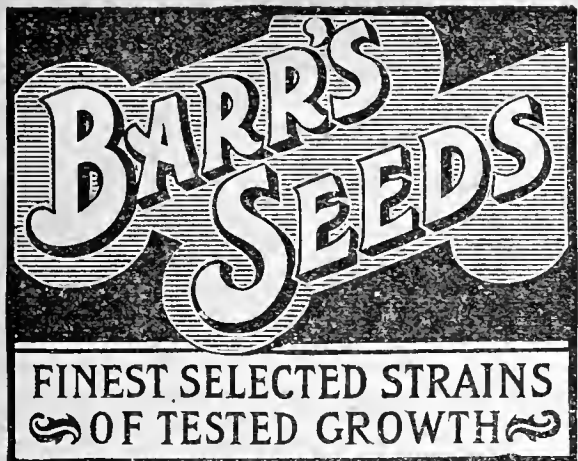
12th.—Fair, but sunless.

13th.—Foggy and dark till 11 A.M.; overcast after.

14th.—Fair and pleasant, but dark from high fog or smoke cloud.

15th.—Fair, with sun visible through cloud in morning.

Very high barometer, overcast sky, foggy, and no rain or snow. Daily range of temperature very small.—G. J. SYMONS.



Barr's Ne Plus Ultra French Bean.—A fine forcing variety, very early, and producing an abundance of fine pods. Per quart, 1/6.

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Barr's "Eureka" Melon.—A grand new scarlet-fleshed variety, fruit large and densely netted, flavour delicious, heavy cropper and early; a splendid exhibition variety. Per packet, 1/6 and 2/6.

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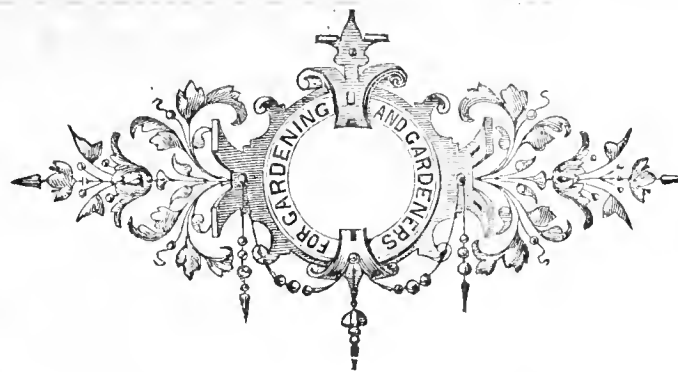
GREENHOUSE SALE.—Half Price. Off Season. 7 by 5, 28/6, 38/6; 10 by 6, 42/-, 50/-; 14 by 6, 52/6, 65/-; 10 by 8, 52/6, 58/6; 14 by 10, 75/-, 87/6; 20 by 10, 95/-, £5 10/-. FRAMES, 8/9, 14/6, 22/6. FOWL HOUSES, 8/9, 10/9, 14/6. Approval.—HYPOLITE, DEPTFORD.

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Journal of Horticulture.

THURSDAY, JANUARY 27, 1898.

THE JOURNAL OF HORTICULTURE can be obtained from the Office, 12, Mitre Court Chambers, Fleet St., London, post free for a Quarter, 3/9. Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.

CHRYSANTHEMUMS UP TO DATE.

ONCE more I have the pleasure of placing before the readers of the *Journal of Horticulture* the results of an election of Japanese and incurved Chrysanthemums, carried out by leading growers and exhibitors of this flower in various parts of the kingdom.

The election in 1894, 1895 and 1896, I am convinced, was useful to many persons, especially those who were taking up the cultivation of this flower for the first time, in assisting them to make selections, which is now admittedly a difficult matter, seeing at what rate new varieties are introduced in the chief sections.

The publication of the results, I have reason to know, has interested many who are not actually cultivators. The election carried out in 1896 was managed upon a different principle from the present or any former one. The country was divided into centres, a leading cultivator taking charge of his particular district, obtaining the returns, and sending them in tabulated. By this method, no less than 107 persons took part in the election.

This year we have gone back to our original plan of inviting none but persons of experience to send in returns compiled by themselves. In the former case some electors, owing to their inability to visit the larger exhibitions, had not the same opportunities as others, although equally qualified in other respects. There is no disguising the fact that those persons who do visit, many, or even a few of the many first-class exhibitions in various parts of the country, are in a much better position to give an opinion upon the relative merits of varieties so numerous offered to the public. Especially is this the case now that new sorts are increased so rapidly, and many of them rushed into the market before they are sufficiently tested to prove not exactly their worth, but to what section they belong. It is under such circumstances that the annual election has been found of so much service to beginners.

Where a large number of persons take part in the selection who have not been able to personally examine many of the newer varieties, their

opinions, although they may be of value, tend to somewhat dilute those who are better favoured in having had such varieties placed before them. In making these remarks upon this portion of the subject I cast no reflection upon the ability of those who may have assisted in a previous election, but take the present opportunity of explaining why the difference in the number of electors is so great, comparing the thirty-three of the present election with the 107 of the last. Invitations in the present case numbered thirty-seven, and thirty-three sent lists in time for compilation. I desire to thank all those who so heartily co-operated in obtaining the returns—work which was sincerely entered upon and, I am sure, much enjoyed by all. To Mr. James Threlfall, my assistant, thanks are equally due for services cheerfully rendered in tabulating the returns so carefully and accurately.

A few remarks upon the position of certain varieties and the result of the election may not be out of place.

Dealing first with the Japanese section, as being more popular than the incurved, I find that in the selections of fifty varieties the thirty-two electors (one who is a noted grower of incurved did not feel qualified to include the Japanese) sent in 190 names, showing how diverse are the opinions amongst experts as to which varieties are really the best. At the last election 258 varieties were named by the 105 electors, proving that the greater the number of electors the greater the divergency of opinion. In the year 1895 sixty-nine electors named 187 varieties in the selection of thirty-six. In the election the year previous, in obtaining the names of the best twenty-four, ninety-three varieties were given by the forty-six electors.

In the present instance no fewer than fifty-nine names of varieties are given once; nineteen are mentioned twice; while twelve others receive three votes each. These figures reduce the number of varieties down to exactly 100, which really is not a very wide range to select fifty from. The reduction of the numbers in this way shows that there is a greater concentration upon the really improved varieties than has occurred before.

Even a cursory glance at the selected fifty will show that electors of experience have made their choice with due regard to the quality of the flowers, and not merely for their size. The bulk of the fifty are noted for an improvement in form coupled with a good mixture of colour. If we except *Etoile de Lyon*, *Mrs. C. H. Payne*, and *International* it would require a stretch of prejudice to say that the list contains varieties which are coarse or lack refinement.

In the present election no less than seven varieties tie for the premier position. It would be difficult indeed to say which of the seven is entitled to the first place on the list. In the 1895 election three varieties tied for this distinction. In the year previous the same number were bracketed, while in 1896 four earned the distinction. It cannot be other than pleasing to Mr. Cannell and myself to find the variety bearing my name occupying so high a position after being cultivated twelve years. No other variety in the first fifty can claim more than seven years' service, this being *Vivian Morel*. *Sunflower*, which occupied such a high position as tenth on the list in 1896, has now fallen so low in the estimation of electors that it only receives two votes in the present list. Take again *Stanstead White*, which was tenth on the list in the 1894 election, and now only receives a single vote. Even that charming variety *Mlle. Thérèse Rey*, which was only four votes behind the premier in 1896, now fails to find more than seventeen supporters.

It cannot be said that the hairy varieties are popular with the electors. Not a single one is to be found in the first fifty. Even *Hairy Wonder*, which is the best of the type, gets no more than ten votes, while *Mrs. Alpheus Hardy*, the pioneer of the section, is not once named.

Those persons who are partial to the Japanese incurved, of which I class *Robert Owen* as a typical variety, have not much cause for satisfaction, as with the exception of *Australie*, *Oceana*, *Modesto*, *Lady Byron*, *Western King*, and *Sunstone* the section is poorly represented. Even *Robert Owen* fails to obtain more than eight

votes. *Viscountess Hambledon*, a charming variety when seen in proper character, receives support from only seven electors.

Cultivators and lovers of *Chrysanthemums* generally appear to favour varieties of the type of *floret* of *Madame Carnot*, *Mutual Friend*, *Phœbus*, *Mons. Hoste*, *Simplicity*, and *Vivian Morel*. He indeed would be a bold person who would say these are not of a desirable type to encourage. All possess the characteristics of depth of *floret* as well as width of bloom. The *Meg Merriès* type of bloom is not so much in request nowadays, and fortunately, as it was some years ago.

A few brief extracts from letters received, showing the opinion in which the election is held by various electors, will be a fitting conclusion to these rather longer notes than I at first intended them to be.

Mr. J. Dumble, *Picton Castle Gardens*, *Haverfordwest*, writes:—"I am very glad you are again publishing the lists. I am sure they serve a most useful purpose, and I am also sure your labours are appreciated."

Mr. R. Jones, *Barford Hill Gardens*, *Warwick*, says:—"It will be interesting to compare the 1896 lists with those of 1893, as many in the former must make room for newer introductions."

Mr. Folkard, *Sand Hutton Hall Gardens*, *York*, writes:—"With so many new Japanese introduced each year it is difficult to know which to choose for the best. I wish you every success."

Mr. C. J. Salter, *Woodhatch Gardens*, *Reigate*, says:—"I have pleasure in forwarding list. It is a difficult matter to place the incurved varieties. The so-called incurved, such as *Ma Perfection*, *Lady Isabel*, and *Duchess of Fife*, must take a high position in the list, owing to their size. In my opinion they should be relegated to the Japanese incurved class. By all means have classes for Japanese incurved."

Mr. A. Sturt, *Round Oak*, *Englefield Green*, *Ascot*, writes:—"I am pleased to see you are again at work in endeavouring to obtain from growers the best varieties for exhibition, and also those of recent introduction."

Mr. A. Haggart, *Moor Park Gardens*, *Ludlow*, says:—"I am very pleased to comply with your wish re selection of Japanese *Chrysanthemums*, and the results must be very serviceable."—EDWIN MOLYNEUX.

[We wish to thank most cordially Mr. Molyneux and all who have aided him in carrying out the object in view—namely, the determination by experts and skilled cultivators of the best present-day *Chrysanthemums* for exhibition, including those of the newer varieties which have been sufficiently tested for an unprejudiced opinion to be formed on their merits. We should like for all new varieties of promise to be tested by the greatest possible number of growers, in order that a full and fair estimate may be obtained of their merits in the autumn.

We take all responsibility for placing Mr. Molyneux's patronymic at the head of the list of what may be termed maximum equals. We think it entitled to the position on the ground of seniority, apart from the fact that no decided improvement on it has yet been produced in its own distinct and brilliant character. We must watch the development of *Joseph Chamberlain*—a progressive name.

Comments on the selected eighteen new Japanese varieties and thirty-six incurved varieties will follow with the tabulated lists another week.—ED.]

VOTES FOR THE BEST FIFTY JAPANESE.

32	E. Molyneux	28	Australian Gold
32	Vivian Morel	27	G. J. Warren
32	Madame Carnot	27	Modesto
32	Charles Davis	27	Mons. Panckoucke
32	Edith Tabor	26	Mrs. J. Lewis
32	Phœbus	25	Lady Ridgway
32	Mons. Chenon de Leché	24	Mrs. W. H. Lees
31	Mrs. H. Weeks	24	Lady Hanham
31	Australie	24	Madame Gustav Henry
30	Simplicity	24	Etoile de Lyon
30	Mutual Friend	23	Graphic
29	Oceana	23	Lady Byron
28	Pride of Madford	21	Eva Knowles

VOTES FOR THE BEST FIFTY JAPANESE—*continued.*

21 Mrs. G. W. Palmer	3 Madame M. Ricoud
21 A. H. Wood	3 Commandant Blusset
21 Western King	3 Mrs. Hume Long
21 Pride of Exmouth	2 Eda Prass
20 Duke of York	2 Goldfinder
20 Miss Elsie Teichmann	2 In Memoriam
19 International	2 Mons. M. de la Rocheterie
19 C. W. Richardson	2 A. H. Fewkes
19 G. C. Schwabe	2 Neva Teichmann
18 Mrs. Charles Blick	2 C. Shrimpton
18 Mrs. C. H. Payne	2 H. L. Sunderbruch
17 Mdlle. T. Rey	2 Mrs. Briscoe Ironside
15 Thomas Wilkins	2 Sunflower
15 Emily Silsbury	2 Duchess of Wellington
15 Mons. Hoste	2 Mons. E. Rosette
14 J. Bidecove	2 W. Marshall
14 Mons. C. Molin	2 Lady Northcote
14 Col. W. B. Smith	2 J. Chamberlain
14 John Seward	2 Vicomte Roger de Chezelles
13 Julia Scaramanga	2 Sunclad
12 Ella Curtis	2 Pallanza
12 Sunstone	2 Surpasse Amiral
12 Mrs. G. Carpenter	1 Violetta
12 Mrs. Hermann Kloss	1 Ponderosum
12 Niveus	1 R. Pinnington
12 Mons. Richard Dean	1 Mons. Joseph Allemana
12 Mdlle. Marie Hoste	1 Maggie Shea
12 Mrs. F. A. Bevan	1 Mrs. Magee
11 Mary Molyneux	1 Duke of Wellington
10 Mrs. W. Mease	1 Croda
10 Mdme. Ad. Chatin	1 Mrs. Charles Keyser
10 Mons. Gruyer	1 Col. T. C. Bourne
10 Hairy Wonder	1 Wood's Pet
10 Dorothy Seward	1 Mrs. D. Dewar
8 Joseph Brooks	1 Princess Ena
8 N.C.S. Jubilee	1 Midnight
8 Mdlle. M. A. de Galbert	1 W. Wright
8 Robert Owen	1 Beauty of Castlewood
8 General Roberts	1 Mons. A. de Galbert
8 Mdlle. Laurence Zedé	1 Jules Chrétien
8 Mrs. J. Shrimpton	1 Le Moucherotte
8 Mrs. A. G. Hubbuck	1 G. W. Childs
7 Viscountess Hambledon	1 Mrs. C. Birch
7 Royal Standard	1 Mrs. Ritson
7 Amiral Avellan	1 Mdme. E. Roger
7 Mons. Edouard André	1 Calvat's Boule d'Or
7 Golden Gate	1 Directeur Tisserand
6 Madame Rozain	1 F. Davis
6 Primrose League	1 Tofana
6 Baronne Ad. de Rothschild	1 W. W. Coles
6 Mrs. S. C. Probin	1 Boule d'Or
6 Miss Dorothy Shea	1 Mdme. H. Hoste
6 Rose Wynne	1 E. G. Hill
6 George Seward	1 Mrs. Dr. Ward
6 Snowdon	1 Waban
6 Mdlle. Philippe Rivoire	1 Stanstead White
5 Matthew Hodgson	1 W. H. Lincoln
5 Louise	1 Pride of Maidenhead
5 Mrs. Maling Grant	1 Beauty of Adelaide
5 Mrs. R. Jones	1 Miss Rita Schroeter
5 Mons. Demay Taillandier	1 Lady Kennaway
5 William Seward	1 Mephisto
5 Master H. Tucker	1 Mrs. H. Chiesman
5 Georgina Pitcher	1 Belle Mauve
5 John Neville	1 Spencer
4 Robert Powell	1 Baronne Tait
4 W. G. Newitt	1 Elthorne Beauty
4 Mons. G. Biron	1 Mdme. J. Bernard
4 President Borel	1 Madame G. Bruant
4 Miss Maggie Blenkiron	1 Mrs. Barks
4 C. Harman Payne	1 Gertrude Salter
4 Bellam	1 Madame Louis Remy
4 Milano	1 Lady E. Saunders
4 Van den Heede	1 Ialene
3 Mrs. E. G. Hill	1 Mdlle. Rosette
3 Royal Sovereign	1 Werther
3 Col. Chase	1 Vicar of Exmouth
3 Madame Ad. Moulin	1 Madame E. Capitante
3 Reine d'Angleterre	1 Captain L. Chaure
3 Mrs. C. Orchard	1 Dennis-Smith-Rylands
3 President Nonin	1 Miss E. Addison
3 Deuil de Jules Ferry	
3 Silver King	

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(To be continued.)

LAWNS.

THE alternating smiles and tears of our much-abused climate may be credited with the fostering of a feature of paramount importance to picturesque gardening. This in allusion to our lawns which, whether they be according to scale but little more than the grass plat on the one hand, or stretch into bold sweeps measured by acres on the other, strike the keynote of a harmony we islanders have become so accustomed to as a matter of course, that but few, perhaps, fully recognise how much is owing to this grand feature.

Yet, as there are gardens and gardens, so are there lawns and lawns, good, bad, and indifferent; but none so bad, even under their most impoverished forms, as not to contribute in some degree to one of the chief characteristics of British landscape gardening. How much more, then, must this be the case where the cultivation of the best Grasses adapted to the purpose is intelligently carried out, and the keeping is all that could be desired! It is, perhaps, only during an exceptional season of drought that signs of neglect from sins of omission become fully apparent, and the lawn, which has been so persistently shaven and shorn for years, with never a thought of any return being made, becomes an arid waste until the kindly rain restores its half-hearted vigour.

Were there anything wanting to emphasise the importance of this phase of gardening, for such, I think, it may be reasonably termed, it is probably to be found in the high esteem afforded to it by more impartial observers. Some transatlantic cousins when "doing" one of our historic Universities with all its time-honoured associations, were asked what particular feature had impressed them most. The reply was, "We guess it is your grass." Hence we may see at a glance the beauty of our English lawns as others see it. Most have, perhaps, come to regard this subject as one being exclusively a part and parcel of the ornamental grounds in direct connection with or contiguity of a mansion. This is, indeed, the principal feature with which we have now to deal, but in the landscape gardeners' art no such restriction is implied.

So far back as 1776, Arthur Young in his descriptive notes ("Young's Tour in Ireland," vol. i., page 23), speaking of the Duke of Leinster's seat, says, "The park ranks among the finest in Ireland, it is a vast lawn." And again, "The park spreads on every side in fine sheets of lawn." Only in one way can this be viewed in direct relation to our subject, and that is, literally, from the garden front of the grand old limestone mansion; and, in spite of many alterations which have taken place since Young visited Carton, the same vantage point in all probability occasioned his critical remarks, it being an excellent example of that happy blending of the kept grounds and a mile of unbroken stretch beyond to where unbrageous plantations and a background of distant mountains complete the scene.

The importance of pressing into service a wide, or rather deep stretch of greensward in the picturesque treatment of grounds surrounding a mansion, connected by the invisible link of a sunk fence, can hardly be over-estimated, although the style and size of the building are considerations not to be ignored, for instances may be noted, although but rarely, in which undue amplitude of unbroken space dwarfs the residence it is intended to dignify; particularly is this the case with some old Tudor mansions. The error, however, is more often one of foreshortening where ample margin is afforded for bolder treatment.

With what may be termed the lawn proper, and which is of more immediate concern, it is easier to point evils than apply remedies, for many a man at the head of affairs has perforce of circumstances to follow the routine of mowing, rolling, and sweeping with but little more than a passing thought of those thorough measures conducive to the best results. I cannot regard the now indispensable lawn-mower as an unmixed blessing, for from long observation the conclusion has been deduced that its persistent use promotes the growth of Daisies, to the detriment of the grass. So much so was the case in one particular place, that, to perpetrate a "bull," our grass was all Daisies in the early summer months. In this case distinct advantages were noticeable whenever an opportunity offered of letting the grass get well ahead, and resorting to the scythe when it was again necessary to have all things decent and in order.

In another place where local conditions altered cases, and during winter, and well on into spring, our grass was all moss, whilst little or no improvement was gained by the usual superficial remedies; a liberal surplus of superphosphate of lime over and above what was required for some old pastures led to a trial of it on the lawn, on the lines that what is sauce for the goose is sauce for the gander. Fortunately the family were absent for some considerable time, for a somewhat liberal dressing, in the words of an old workman, burnt everything up; but, practically, as everything visible was moss, and the burning was succeeded by the best growth of grass that had been seen for years, it was "All's well that ends well," and worthy of note. Further trials showed the superiority of superphosphate over fresh slaked lime for the purpose.

WILLIAMS' MEMORIAL. — At a recent meeting of the Williams' Memorial Trustees, Dr. Masters in the chair, it was decided to offer two silver Memorial medals at the summer show of the Royal Botanic Society, to be held in May, and two silver Memorial medals at the York Gala to be held this year.

In renovating and re-levelling some old tennis lawns at a minimum of expense and labour, the same turf was relaid upon a top-dressing of fresh soil, the action of cutting the sods being sufficient to kill off the coarse weeds which had hitherto been conspicuous. Various kinds of chemical manures have been employed in the endeavour to re-vitalise exhausted lawns in the simplest manner, but the virtues of superphosphate of lime have for the purpose surpassed them all; such at least is the experience and opinion of—A WORKER.

COMBATING EELWORMS AND SUPPORTING PLANTS.

PRACTICE WITH SOLUBLE PHENYLE.

SOME of my friends remember, and not unfrequently make allusions to, some experiments I once conducted in the direction of feeding Grape Vines "through the bottle." Large glass open-necked jars or bottles filled with water were suspended close up to joints from which bunch-bearing laterals sprang. Moss was packed somewhat tightly about the joints and between the tops of the bottles, capillary attraction doing the rest. As a result of being kept constantly moist roots were quickly pushed out by the rod, and were not long in finding their way down into the bottles. From the long straight roots quickly sprung numerous fibres, the interior of the bottles becoming filled with a network of roots. When the Vine leaves were fully developed, and the days bright and sunny, the water was drawn out of the bottles at an astonishing rate, as much as 3 pints being taken out of one bottle in a single day.

During the time I was content to use clear water only everything went smoothly, but directly feeding with liquid manure was commenced the roots ceased to perform their functions, the majority of the fibres perishing in a few hours. Changing the water, pruning the roots, and starting again with clear water resulted in fresh thickets of fibres forming, and after repeated experiments the conclusion arrived at was that we may easily err in applying manures too strongly to delicate roots. Not only are the latter incapable of absorbing manures of any kind other than in infinitesimal quantities, but they may easily be injured by an overdose.

What has that to do with eelworm destruction? would be a fair question. My reply would be, Much, very much, in my case. Those simple experiments have influenced my views on applying manures or insecticides to the soil ever since. It is not the heavy supplies that do the most good; comparatively light dressings or weak liquid manure, *applied at the right time*, doing far better service without risk of injury to tender roots. No doubt roots confined in water are most susceptible of injury from an overdose of anything, but according to my experience not so very much more so than root fibres confined in small ridges, boxes, or pots of soil. No liquid manure and no disinfectant should be applied when the soil is in a dry state. It is safer and far more effectively given when the soil is just moist.

"Halogen," and any other clever student of chemistry, may laugh at the idea that Little's soluble phenyle contains any appreciable manurial properties, and may go on doing so to their heart's content, so far as I am concerned, but this will not prevent my using it freely—primarily as a remedy for eelworm, but also because it is a good fertiliser. Our row of 1 gallon drums just delivered speak for themselves. If I had neglected to order them my foreman would have refreshed my memory, as he had commenced doing every day we transacted business together. Scientists have done much for us in various ways, but too often they prove either too much or too little. Many of those puny experiments about which we hear so much, and upon which such great expectations have been founded, when put into actual practice not unfrequently prove most disappointing. Nor is this to be wondered at, seeing how much conditions vary.

Not till I saw the effects of wetting some of the Tomato leaves with diluted soluble phenyle did I fully realise how strong the stuff is. If phenyle used at the rate of 1 gallon to 1000 gallons of water will injure foliage, then the same strength may, though not necessarily so, be equally injurious to tender root fibres. The quantity used for either Tomatoes or Cucumbers has been gradually reduced until by fair testing we decided that 1 gallon of phenyle is enough for 2000 gallons of water, and that is the rate at which it will be used, as a rule, this season. We certainly applied it very much stronger to the Cyclamens, owing to the eelworm having become strongly established in their roots before we were aware what was wrong. In this instance it was a case of kill or cure. It answered well, but I ought to have added that when root-fibres, instead of a few swollen roots were becoming abundant, the phenyle was applied in a much more diluted state.

Each season we have forked into the surface of newly dug borders intended for Tomatoes a dressing of either kainit 4 ozs., superphosphate 4 ozs., and soot about 8 ozs. per square yard; or 4 ozs. of kainit, 8 ozs. of basic slag, and 8 ozs. of soot. These dressings are

supplemented by frequent waterings with clear soot water and nitrate of soda dissolved, and used at the rate of quarter of an ounce to a gallon of water occasionally. Solid manure is mixed with the second spit at the rate of about a cartload to 4 rods of ground—not a heavy dressing by any means, but just enough to supply the needful humus. The natural and artificial manures, coupled with abundance of water, appear to suit Tomatoes, the plants forming stout hard stems and a fairly disease-resisting growth, but cannot be depended upon to destroy eelworms.

We now, in addition to the natural and artificial manures named, give a good soaking with phenyle when the plants are about 2 feet high and well set with fruit by way of a preventive, and on the first signs of drooping, whether from eelworm or an attack of fungus, a second dose of phenyle is applied. Altogether the plants in all the houses, whether they are in pots or planted out, get a phenyle watering about six times in a season, and if at the end of 1898 we can say our failures were no more numerous than in the two preceding years, then the £2, or rather more, spent on Little's soluble phenyle (bought in quantities at 6s. 6d. per gallon drum) will have proved a good investment.

As I have previously asserted, dryness at the roots is not only most injurious to Tomato and Cucumber plants, especially when these are carrying heavy crops, but it also favours the increase of eelworms. It is along the pathways that the most failures with Tomatoes are likely to occur, because it is there where they are most liable to suffer from dryness. The paths ought to be mulched more heavily than the rest of the borders, and also loosened with a fork occasionally. Cucumbers show the effect of dryness at the roots more quickly than do Tomatoes in borders, owing to their limited rooting area, and the roots are also more easily injured by an overdose of phenyle, or a dressing of chemical or too strong liquid manure.

We use phenyle as a preventive of eelworm, and if the plants subsequently commence flagging from an attack, an application of it saves the greater portion. So tenacious of life, however, is this fearful pest, that we have not succeeded in wholly clearing plants and the soil of it, but if successful in keeping the plants in a profitable condition through several months that satisfies me.

There is nothing gained by keeping Cucumber plants about a whole season, and I prefer to have a quick heavy crop, and then plant afresh. When our first batch was turned out last season, many of them were affected by eelworm. Wholly changing the soil in a house 120 feet long meant much labour at a busy time. Instead of this the old soil was levelled, well soaked with diluted phenyle no stronger than usual, and made to serve as a foundation for fresh mounds of soil. If this did not show confidence in phenyle, nothing I can say or do will emphasise the point. Those plants succeeded as well as any second crop Cucumbers ever did with me, and kept bearing freely as long as it paid to expend fire heat and labour upon late crops generally.

Kainit may be a remedy for eelworm, but the only time it was tried at my expense the remedy proved worse than the disease. The young man in charge of the house was a little too zealous, and did not wait for full instructions. He wished afterwards that he had. As far as I could ascertain, about 8 ozs. were applied to every yard run of ridge, or enough to just whiten it; but it played sad havoc with the Cucumber plants. As far as Cucumbers are concerned, we will dispense with kainit, if you please. Kainit applied too strongly injures the tender stems of young Tomato and Cucumber plants, and poisons the soil. It is safe enough in moderate quantities well mixed with the top spit of a Tomato border, but should be kept out of the small mounds of soil that Cucumbers ought to be planted in. We swear by soot, but even this had better be applied "little and often," and in the form of clear soot water, than very strongly in the compost.

On referring to my Journal I find that something more ought to be said concerning the manurial properties of phenyle. If the marked improvement repeatedly observed in the colour of the foliage and the progress of the plants very shortly after applying phenyle is not due to the manurial properties contained in it, to what else can it be attributed? I am inclined to think there is something in it which "Halogen" has not discovered. Let him try again. If the results of his investigations had appeared two years ago and I had acted in accordance therewith it is certain that I should not have had such healthy plants generally and profitable crops of Cucumbers and Tomatoes as I have been able to produce; in fact, I should have been misled by laboratory teaching. Applied as we apply it, Little's soluble phenyle is worth all it costs us as a manure alone.—W. IGGULDEN.

[How now, "Halogen" and Mr. Dyke? When one person kills his plants with Little's soluble phenyle and another cures them of eelworm by its use; when one says it contains practically no manurial properties, while another avers that it produces "marked improvement" in the foliage, we repeat there is something wrong somewhere. Has it been used, in the case of fatalities, when the soil was too dry? Is it like somebody's tea, "always good alike" when distributed by vendors?]



CYPRIPEDIUM F. S. ROBERTS.

At the last meeting of the Royal Horticultural Society, held in the Drill Hall, on January 11th, Messrs. H. Low & Co., Clapton, showed, amongst other Orchids, a *Cypripedium*, named F. S. Roberts. Of this we give an illustration (fig. 12). It is a hybrid, but the exhibitors omitted to give the parentage. The flower is very handsome, and quite distinct from all others. The ground colour throughout the dorsal sepals, petals, and the pouch is a dull white, over which are strewn numberless spots of claret crimson. The pouch has a patch of this colour on the front. The Orchid Committee of the Society recommended an award of merit.

MASDEVALLIA ARMINI.

It cannot be said that this plant is common, despite the fact that it was introduced so far back as 1882. Such being the case, we are not surprised that "Young Orchid Grower" has not seen it. No doubt the accompanying note and woodcut (fig. 13, page 83) will give him all the information he requires. Messrs. J. Veitch & Sons, Ltd., in their monograph of the *Masdevallias*, give the following description and note:—"Leaves oblong-lanceolate, $1\frac{1}{2}$ inch long, narrowed below into a somewhat slender petiole as long as the blade. Scapes slender, longer than the leaves, one-flowered. Perianth tube short, whitish; free portion of sepals crimson-purple, the dorsal one sub-orbicular, concave; the lateral two broadly oval oblong, nearly flat, and contracted to filiform, yellowish tails 1-2 inches long. Petals linear-oblong, toothed at the apex, white; lip oblong, reflexed at the tip, where there is a blackish purple warty blotch. First discovered on the Eastern Cordillera of New Granada, in the Pamplona district, more than thirty years ago, by Schlim, but dedicated by the late Professor Reichenbach to his friend Hermann Wagener, by latinising the Christian name. It appears to have been first introduced into European gardens by Messrs. Sander & Co. of St. Albans in 1882."

ODONTOGLOSSUM PULCHELLUM.

Few Orchids are more refined and beautiful than this aptly named species, the erect spikes of pure white blossoms always eliciting the warmest praise from those seeing it for the first time. It has bright green oblong pseudo-bulbs and narrow leaves, those at the base enclosing the flower spikes. It is not a difficult plant to grow, and if imported in good condition may be established with very little trouble. Masses of the plant, perhaps a foot or so across, are occasionally to be had from the sale rooms, and these have a fine effect when in flower owing to the number of spikes they carry.

If much shrivelled they should be laid out in a warm moist house for a time, but I have frequently potted them as received with the best results. In no case must much compost be allowed; even when the plants are well established they dislike a lot of material about them. For small plants fill the pots to within an inch of the rim with crocks, and over this lay a little rough sphagnum moss, then place the plant in position and fill up with equal parts of peat and moss, with plenty of rough crocks and charcoal intermixed. Take care that the plants are well firmed, and that the material is good, for *O. pulchellum* has a great dislike for disturbance.

Trim the compost off neatly, and place the plants without avoidable delay in their growing quarters. This species likes a long season of growth; indeed it may be said to be always more or less active, and as soon as the flower spike appears the young shoots also begin to move. As this is in the dead of winter, it is important that all available light reaches the plants, and no filth of any kind must be allowed on the glass to obstruct this. Plenty of moisture will be needed as the days lengthen, and must be continued right up to the time the pseudo-bulbs are finished.

Then if ever there should be a slight diminution before the strain of flowering comes upon the plant, but nothing like a drying system must be practised. Many of the cool section of *Odontoglossums* are best repotted in autumn, but I have had the best results with this plant by doing it immediately after flowering before the young shoots commence rooting. All the year round a cool moist atmosphere is required, and this necessitates heavy shading from May onwards.

Light in winter, shade in summer, and always a moist atmosphere, these are the cardinal points in its culture. *O. pulchellum* was introduced to this country by the late Mr. Bateman, who received it from its discoverer, Mr. G. Ure Skinner, in 1840. It is a native of Guatemala.

ANGRÆCUM SESQUIPEDALE.

This remarkable species of *Angræcum* is now flowering, the pure white blossoms, with the marvellously elongated spur, having a distinct appearance from those of any other plant, and once seen can never be forgotten. The plant itself is of stiff, erect habit, handsome when well furnished with leaves, but too often having a lanky, ungainly look owing to the loss of the lower tiers. This is not, however, confined to cultivated plants, but is even more frequent among imported specimens, owing to the fact that in their native habitat they grow nearly or quite exposed to the full glare of a tropical sun. Collectors of the plant say that these ragged, untidy looking plants are those that flower most freely, this doubtless being the result of the thorough baking they get.

But under cultivation it is a blemish, for it is quite possible to grow the plants and make them flower freely without the loss of a single leaf. Light they undoubtedly require, but we must temper the sunlight for them a little by shading lightly during the heat of the day. It is a noteworthy fact that *A. sesquipedale* will thrive in a

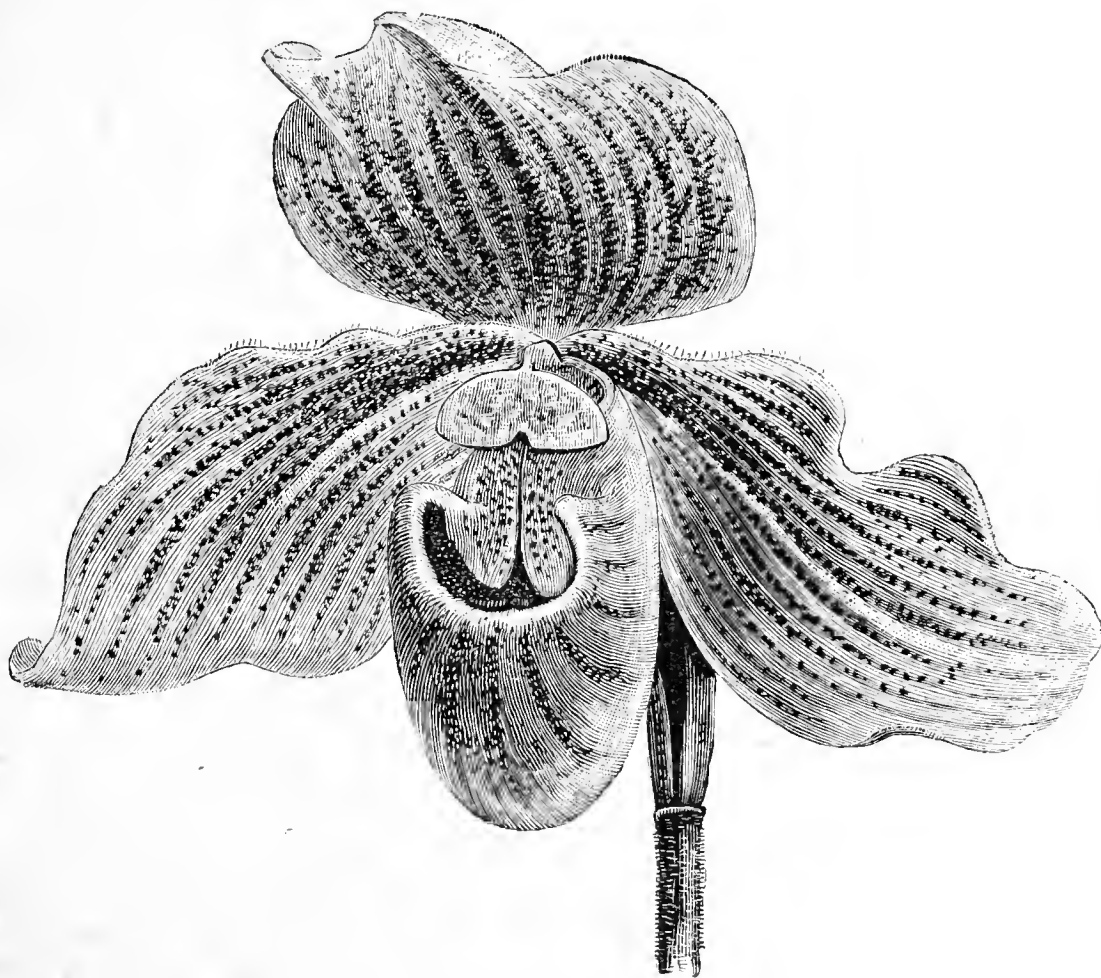


FIG. 12.—CYPRIPEDIUM F. S. ROBERTS.

very much drier atmosphere than most of the distichous leaved kinds, and if there are dryish places in a house where these are not doing well their places may be taken by the *Angræcums*, with advantage to one, if not to both.

It delights in a high temperature, and often steadily refuses to start a root or leaf in a house kept cooler than it needs. Where *Dendrobiums* of the deciduous class, and the usual run of *Aërides* and *Phalænopsis* thrive, there will usually be heat enough for the *Angræcum* while growing. During the winter the temperature must not go below 60°, except on the very coldest nights. With regard to its resting and growing seasons, these are not very sharply defined, and in this it is best to let the plants take their own course. Moisture at the root is essential; less, of course, during winter, but at no time should the roots be absolutely dry.

Sphagnum moss, clean and freshly picked, is by far the best rooting medium when the plants are to be grown in pots or baskets. Plenty of charcoal and ballast may be mixed with it, and abundant drainage provided, as it is important that air reaches the roots and the water passes quickly away. When the plants are left standing long in one position the roots generally leave their pot or basket and cling to whatever is near, such as neighbouring plants, the staging, or even in the case of strong ones, the soil underneath the latter. This shows the need of as large receptacles as may be convenient. *A. sesquipedale* has long been known to science, but did not flower in this

country until 1857, with the Rev. Mr. Ellis, who first imported it alive two years before.—H. R. R.

A FLORIFEROUS CALANTHE.

I SEND you a photo of a curious growth of a *Calanthe Veitchi*. The old bulb is 7 inches long, and it had two growths from the bottom. One of them is 10 inches in length, the first spike 4 feet, with forty-four flowers; second spike 2 feet 6 inches, with thirteen flowers. The second bulb is 6 inches in length, first spike 3 feet, with twenty-four flowers; the second 12 inches, with seven flowers. Then, in addition, there are three small pseudo-bulbs from the very top of the old bulb, one 3 inches long with flower spikes 12 inches, bearing six flowers. The other two are pseudo-bulbs of 2½ inches, with flower spikes containing three and four flowers, so that there are five new growths with 101 from the old bulb. I do not know if you will consider this anything out of the way. I should hardly have expected the small bulbs to flower.—R. DYMOND.

[The novelty consists in the small pseudo-bulbs, issuing from the top of the older and larger, flowering. It is not uncommon for them to be produced, and they are usually taken off and grown for flowering the following year. It is rare for them to flower during the year of production.]

A USEFUL ORCHID STAND.

MOST Orchid growers who have to deal with plants placed over a close wooden stage, upon which has been scattered a layer of shingle, cinders, coke broken small, or similar material, know what it is to have to deal with a troublesome fungus, which forms in the decaying wood and runs into the Orchid pot. I invert flower pots, and on each one a pot containing an Orchid is placed. The other day I turned up some of these, and was horrified to find the fungus had entirely covered the insides of the inverted pots with a cobwebby substance, and had sent snow-white threads through the holes in the base of each pot, the inverted one, and that in which the Orchid was growing, and in several instances had passed up amongst the Orchid roots.

While considering what had better be done to stop the progress of the fungus amongst the Orchid roots, and prevent it in future from attacking the plants at all, there came by post from Mr. Wm. Murray, Wylam-on-Tyne, a series of stands, made of stout wire, exactly in the form of a flower pot. They answer the same purpose as the inverted pot. No fungus can lay hold of this stand; they have a much better appearance than the flower pots, and I could but exclaim, Here is the very thing that is needed to prevent the fungus reaching the Orchid roots, giving us, at the same time, a much neater stand for the plants! The old saying is exemplified: "Necessity is the mother of invention." If Mr. Murray had not had any fungus to deal with, he never would have thought of this useful little stand.—J. DOUGLAS.

EQUAL PRIZES.

JUDGING from the remarks of "Sadoc" (page 597 last volume), this would appear to be an unpopular method of awarding prizes even in close contests, but like Mr. Beckett (page 17) I am of opinion that there are occasional instances where the awarding of equal—not necessarily first prizes, for it is an easier matter sometimes to decide on the first than the remaining cards—is the fairest means of determining when the merits of two competing exhibits are so closely identical.

It is undoubtedly a delicate point to argue, and especially so when the Editor in his footnote gives his casting vote against such a course of action generally. The opinions, even of the Editor and "Sadoc," are in conflict to some extent, for while the latter admits an instance when an "equal" would be justified, the Editor's footnote points out where the determining factor may be found. He also asks, "Were equal prizes ever awarded in the cast of the 'premier' bloom in a Chrysanthemum show?" Yes. I was competing myself at a provincial show in which a certificate and prize in cash was offered for the best bloom in the show, and although the task would seem to have been an easy one, the prize was divided between two blooms, but only one could, of course, claim the certificate. If it had been the work of inexperienced judges one might have made allowance, but this was not so. I have never heard of a similar case, and evidently the Editor is quite a stranger to such unsatisfactory judgment.

It would be, I should say, a most unusual experience to find two groups so close in point of merit, that seven experts were necessary to criticise, and then not to find one spare point. I believe that two judges, well agreed, would find an easier solution to the difficulty than so many. I well remember a case where two Chrysanthemum specialists were engaged in judging the cut bloom section of a good show in the West of England. One had a marked partiality for the Japanese, the other incurred. Here there were a N.C. certificate to be given the best bloom in the show, and after scrutinising closely, they each chose a bloom according to his own fancy, and, unfortunately, neither would give way, each claiming to have the better. In the end other judges were consulted, and neither of the chosen blooms was selected for the coveted honour, but another, and that, too, far removed from being the best, was substituted, and,

needless to say, considerable and severe comment was passed over the undeserved but distinguished victor.

Where the most difficult problems to be decided in the matter of judging is found, according to my experience, is at shows where two men are expected to undertake everything—fruit, vegetables, plants, specimens and groups, florists' and other flowers, bouquets and vases, honey—in fact, everything that is found in the schedule of many local shows. Very few gardeners can claim to be experts in every branch, and they cannot be expected to give unqualified satisfaction to every competitor. I saw two stands of show Dahlias staged last summer at a local show by two rival growers, and to which the judges awarded equal first prizes. This gave satisfaction apparently to everyone except the two exhibitors referred to. Their blooms, taken individually, were so perfect a counterpart one of the other, that it was impossible—except to the growers themselves—to find a determining point making one superior to the other.

No doubt, as "Sadoc" puts it, the awarding of equal prizes makes an easy way out of a difficulty for the judges. It may not be true of the York Show, but mistakes in judging are sometimes attributable to the want of proper time in which to carry out the work; and no matter how qualified judges may be, they cannot concentrate their thoughts and decisions when hampered with visitors, admitted they may be at the advertised hour, but before the judging is finished. Mistakes made under these conditions cannot be wilful, but are the outcome of laxity on the part of the management of the shows. Mr. Harding affords convincing proof of the fairness of giving equal prizes in his contribution (page 66). I am quite prepared to admit that it is only on rare occasions that the necessity for awarding equal prizes occurs, but when there is an instance, such as that quoted by Mr. Harding, justice is done by placing them on equal terms. No exhibitor could feel dissatisfied with such a decision when the merits of their exhibits were so closely identical.—W. S., *Wilts*.

[Our able correspondent does not say to which of the "equal best" blooms the certificate was awarded, and why. If a silver cup had been offered in Mr. Harding's class it would presumably have been withheld because of the high excellence of the produce.]

PEAR NOTES.

IT has never been satisfactorily cleared up why a certain Pear in one locality should be a good melting fruit, and in another only fit for the stewpan; and why in one season a variety should be of excellent quality, and in another only moderately so.

There must be some external cause for this variableness, and surely it is not past finding out. Mr. Dyke's remarks on *Beurré Rance* (page 42) have induced me to pen this note. He says with him it is useless for dessert purposes. I may say it was the same here; we had only a part of a tree of this variety, which had to come away to make room for one of better quality. Some years ago, when living in a moisture-laden atmosphere, the Pear quoted above was delicious, and one of our best winter fruits.

I ask therefore, is it not possible that the hygrometrical conditions of the atmosphere may not have something more to do with the quality of Pears than soil and situation? Both temperature and moisture here are similar to what they are from where Mr. Dyke writes, but the subsoil formation differs. Here we have rather a strong loam resting on a sandstone formation, while I believe Mr. Dyke's loam is of similar texture, but on limestone formation. If I am wrong, perhaps your correspondent will correct me. Be this as it may, the results are the same; therefore I should be glad if some of our friends from the western portions of the kingdom, especially from parts where the atmosphere is heavily charged with moisture, would give their experience of the quality of this Pear; it would help to elucidate my theory or prove its illusiveness.—J. EASTER, *Nostell Priory Gardens*.

DIPLACUS GLUTINOSUS.

THIS old favourite is popularly known as the Tree Mimulus, but though closely allied to the latter is not considered a true Mimulus. Probably no two species of plants could come nearer than these without being quite the same. It is well worthy of being more frequently grown, for though the flowers are not of much use in a cut state, the plants when well grown and covered with the reddish-orange flowers, are admirably suited for the decoration of rooms, and if placed in light positions near windows will remain in a satisfactory state for some considerable time. For this purpose they are with us highly esteemed.

Cuttings of the young growths root easily enough in a Cucumber frame after the plants have done flowering. The pots should be filled with sandy soil, and if a little bottom heat can be provided so much the better. When rooted, pot into 3-inch pots, after which they can be hardened in the greenhouse or a close frame. It is simply a question as to the size of the plants ultimately required in connection with repotting. We find them most suitable in 4 and 5-inch. One stake is placed in the centre of each, according to height, to which the side shoots are loosely tied. After flowering, and when there is no danger of frost, the old plants which are kept are stood outside for a time. They may be planted out during summer in mixed borders, and will sometimes flower fairly well in that position.

The colour of the peculiarly shaped blooms is almost unique, but I find it is greatly influenced by cultivation. If grown sturdily in a good light and well supplied with nourishment the flowers produced will be much deeper in tint than those growing on long weak growths in shaded positions. This plant appears to accommodate itself easily to different soils, but a sandy loam mixed with a small proportion of leaf soil or well-decomposed manure appears to suit its requirements admirably.—J. SHALFORD.

[We think the plant in question is now classed as a true *Mimulus*.]

POINSETTIA PULCHERRIMA.

THIS plant is now very extensively cultivated, and well it deserves to be, as there are few that are more and better adapted for decorative purposes during the winter. The system of culture I have adopted is different from that of many cultivators, but as I have been successful with it for many years, I thought a few remarks on culture would be useful.

The plant is a native of Mexico, having been discovered in that country by Mr. Poinsetti in 1828, and whether different varieties of the species were sent over, or whether the difference in cultivation has the effect of improving the quality of the bracts, I know not, but I certainly have not seen better or more brilliant specimens anywhere than have been produced by the culture here described.

When the flowering period is over the plants are gradually dried off, and the pots laid on their sides underneath the stage in a cool stove, where they remain until the end of March. In that month the young growths of last season are cut down to within three or four eyes from the base of the growth. No water is applied to the roots until the wounds are dried, but the pots are removed to the greenhouse, where they are placed on the stage near the glass, and there they remain, water being applied to the roots when it is required, but no more than is necessary to maintain a healthy growth. They do not require nearly so much water here as they would in the plant stove, where the heat would be 55° or 60° at night.

When the buds have started, and are about half an inch long, the plants must be turned out of the pots and repotted;—and to grow this plant well it requires a rich compost. The following answers admirably: Rich turfy loam five parts, one part decayed stable manure, one part leaf soil, and an 8-inch potful of crushed bones to each barrowload of the compost; a little sand is necessary if the loam is of close texture. Drain the pots well, and place over the broken potsherds some of the fibrous part of the loam from which the clayey particles have been well shaken out; if the finer portion of the compost becomes mixed with the drainage the plants will not retain their leaves to the end of the season. After potting, the plants should be kept near the glass and be fully exposed to sunshine, and the house be freely aired; this will cause the growths to come strong and short-jointed, the leaves to be thick and leathery, and the wood will be of a reddish tint.

Immediately the pots are well filled with roots, which will be by the middle of May, the plants may be repotted in similar compost to the above, and by the middle of June they can be removed to a position out of doors where they are partially shaded from the sun. I have found they do best on the north or west side of a low house where the tops of the plants are exposed to the sun and the lower portion sheltered from its rays. If they are exposed to the direct force of a strong gale of wind many of the leaves are injured. In this position they must not at any time suffer by want of water at the roots, as this would also cause some of the leaves to drop off, and the object of the cultivator is to see that this does not occur, as the loss of the lower or any leaves very much impairs the beauty of the plants.

About the middle of September we remove the plants to a house where there is a night temperature of 50° or 55°, and this ought not to be exceeded until the bracts commence to form, when the night temperature should be 65° until they are fully developed. I ought to mention that as soon as the plants are taken indoors they should be well watered with manure water; every alternate watering may be of guano water. This deepens the green of the stem and leaves and adds brilliancy to the floral bracts.

Propagation is effected by cutting the stem into short lengths and inserting the eyes in the same way as Vine eyes; they thus grow as freely as Vines, requiring very similar treatment. Another method equally simple is this: When the young growths are 3 or 4 inches in length it will often be found that there are more on the plants than ought to be allowed to remain. Let the surplus growths be taken off with heels and be placed in a gentle bottom heat under a bell-glass, where they will, if shaded from the sun, very soon produce roots. If each cutting is potted in sandy loam in a thumb pot the plants will not suffer anything when they are repotted. In three weeks from the time of putting in the cuttings the plants will be ready to be repotted. After being established they may gradually be inured to a cooler atmosphere, and be ultimately placed out of doors and be treated as has been recommended for the established plants.

The Poinsettia does not require very much pot room; the summer-rooted cuttings may be placed in pots 4 inches in diameter, or three can be potted in 6-inch pots. We have some in 6-inch pots from cuttings rooted in June; each pot contains three plants, which stand 15 inches from the surface of the pots, and the floral bracts are as much as 15 inches across.—D. J.



WEATHER IN LONDON.—Mild weather has prevailed in London during the past seven days. With the exception of last Saturday, which was very bright, the days have been dull, but there have been no heavy fogs. Rain has not fallen during this interval, nor is it required. A change to dry, gentle frosts would be appreciated.

— WEATHER IN THE NORTH.—The weather of the past week has again been changeable. In the former part high westerly winds prevailed. After an extremely wet night, Saturday, Sunday, and Monday were good spring-like days, although there was little sunshine. On Sunday morning there was a very slight touch of frost. Tuesday morning was rather dull, but fresh and pleasant.—B. D., S. Perthshire.

— LOST VOTES AT THE RECENT GARDENERS' BENEVOLENT ELECTION.—I am anxious to call the attention of subscribers to the above Institution to the number of votes that were lost through the neglect of several persons in omitting to sign their names to the voting papers, and others failing to pay their subscriptions. No fewer than 1152 votes were lost in this way—a most serious thing for the candidates. It is strange but true that 1035 votes were not signed, and 117 lost through failures in payment. The Orphan Fund election takes place on February 18th. Let me advise those subscribers to be careful and sign their names, and mark their votes plainly in the sheet, to save a repetition of the misfortune to which I draw attention.—ALFRED OUTRAM, F.R.H.S., 7, Moore Park Road, Fulham.

— WOOLTON GARDENERS' IMPROVEMENT SOCIETY.—The annual meeting of the above Society was held under the presidency of the Rev. R. E. Roberts. Mr. H. Corlett had eight microscopes on view, the slides including various plants and insects, the series proving most interesting. A charming collection of Orchids in variety came from Mr. R. Todd, gardener to the President, Holbrook Gaskell, Esq., Woolton Wood. These were highly appreciated. Mr. R. G. Waterman, who has worked so assiduously to make the year's work such a great success, was again unanimously re-elected Hon. Treasurer and Secretary. An effort was made at a social gathering, also by a sale stall at the Sefton Park Show, held by permission of the Liverpool Horticultural Association, by which a donation of £10 17s. 8d. has been forwarded to H. J. Veitch, Esq., Treasurer of the Victorian Era Fund, in connection with the Gardeners' Royal Benevolent Society. A warm tribute was paid to the late Rev. George Beaumont, who had been a Vice-President since the formation of the Society. It was said of him that he did not speak about things he did not know, but when he did speak it was with the confidence of an experienced teacher, and with the quiet certainty of one who had reason to know that his assertions rested on a basis of fact.—R. P. R.

— ROYAL METEOROLOGICAL SOCIETY.—The annual meeting of this Society was held on Wednesday, the 19th inst., at the Institution of Civil Engineers, Mr. E. Mawley, F.R.H.S., President, in the chair. The Secretary read the report of the Council for the year 1897, showing that there had been an increase in the number of Fellows, and that the finances were satisfactory. The President, Mr. Edward Mawley, then gave an address on "Weather Influences on Farm and Garden Crops," in which he pointed out the intimate connection between meteorology, agriculture, and horticulture. He explained the special characteristics of the climate of the British Isles as regards temperature and rainfall. Of all the influences brought to bear on vegetable life by the atmosphere, he considered temperature to be the most powerful and far reaching, and only second to this came rainfall. The leading effects of snow, wind, and sunshine, as well as of prolonged droughts, severe frosts, and persistent rains were also described. He then dealt with the influence of different important weather changes on such farm crops as Wheat, roots, and grass, as well as on fruit trees, vegetables, and flowering plants in the garden. In his concluding remarks he called attention to the great want of experimental farms in conjunction with meteorological stations being established in this and other countries in Europe, for it was only by the examination of meteorological observations, together with weekly records of the extent and character of the growth made by our leading crops, that the close connection existing between weather changes and their influences on such crops could be clearly traced. Mr. F. C. Bayard, L.L.M., was elected President for the year.

— NATIONAL VIOLA SOCIETY.—A Committee meeting of this Society will be held on Thursday, the 27th inst., to arrange schedule of prizes for the forthcoming season. The Hon. Secretary is Mr. R. T. Dougall, 52, Pembroke Road, Walthamstow, Essex.

— DEATH OF AN OLD FLORIST.—Midland and other florists will learn with regret of the death of Mr. J. P. Sharp, aged seventy-nine years, which took place on the 20th inst., at his residence, King's Heath, Birmingham. The deceased was a well-known florist, especially in the cultivation of Carnations, Picotees, Auriculas, and Tulips, around Birmingham; also as an exhibitor of the same some years ago. He was the raiser of such Picotees as the heavy red-edged varieties—Mrs. Sharp, Campanini, and others.

— NEWCASTLE-ON-TYNE FLOWER SHOWS.—We have received a copy of the schedule of the above. The spring show will be held in the Olympia on Wednesday and Thursday, 20th and 21st April, and the summer show in the Recreation Ground, in conjunction with the Northumberland Agricultural Show, on Wednesday, Thursday, and Friday, 13th, 14th, and 15th July, 1898. The Royal Horticultural Society's Council have accepted an invitation to be present, and will send a deputation with full powers to make awards. The attendance at the last joint show, in the year 1893, was enormous, and the financial result was a very successful one. Copies of the schedule may be had from the Secretary, 54, Westgate Road.

— THE ABNORMAL WEATHER ABROAD.—An evening paper says, "As in England, so on the Continent. The infallible 'oldest inhabitant' cannot remember such a mild winter in Germany as the present one. Reports from all parts of the country speak of the spring-like weather now prevailing. In South Thuringia grass is being mown in the meadows, and the storks and starlings have returned from their winter quarters. A list of the flowers in bloom in the same district has just been drawn up by a botanist residing there. It includes twenty kinds of spring flowers, among them being Daisies, Dandelions, Ranunculus, Ladies' Fingers, Strawberries, Wild Pansies, Meadow Grass, Speedwell, Brambles, Raspberries, Violets, and, in the gardens, Christmas Roses."

— THE WEATHER OF 1897.—The wind was in a westerly direction ninety-two days. The total rainfall was 25.16 inches, which fell on 194 days, and is 1.63 inch below the average for the year. The greatest daily fall was 1.28 inch on July 26th. August was the wettest month, with 4.51 inches. Barometer (corrected and reduced): Highest reading, 30.708 inches on November 21st; lowest, 28.575 inches on March 3rd. Thermometers: Highest in the shade, 88° on August 5th; lowest, 19° on December 23rd. Mean of daily maxima, 55.60°; mean of daily minima, 41.19°. Mean temperature of the year, 48.39°. Lowest on the grass, 16° on April 11th and December 23rd; highest in the sun, 145° on June 28th and July 12th. Mean of earth temperature at 3 feet, 48.64°. Total sunshine, 1549 hours. There were seventy-one sunless days.—W. H. DIVERS, *Belvoir Castle Gardens, Grantham.*

— THE GARDENERS' ORPHAN FUND.—How strange it is that many gardeners, and especially fathers of young families, cannot be induced to subscribe, if but 5s. annually, to the Orphan Fund. Hundreds do, and thousands do not. In the ballot papers for the ensuing election there are eighteen candidates for election, but of sixteen families only, as in two cases members of the same family are, I consider most improperly, nominated. The rules ought to forbid that certainly. But out of the sixteen cases not one in the descriptions attached mentions, "Father a subscriber to the Fund." This is worse than unfortunate, it is culpable neglect. People who have never shown the least desire to support the Fund in life scruple not to let the subscriptions of other gardeners be used for the maintenance of their children should they become orphans. Surely it is time some conditions as to subscriptions were imposed, as nothing seems to be at present done to enforce amongst a large section of gardeners the principle of self-help. It will be interesting to notice results when the election takes place. Some applications are of a very pathetic nature, others show very little indeed of hardship. Will those cases that strike any unbiassed subscriber as demanding the greatest sympathy be successful, or will those candidates be returned who, apart from merit, have the largest number of friends, either in the country or at court? After all, as is well known, it is in the latter place where elections are won. To make the ballot a reality, every subscriber should fill up his or her ballot papers as they desire, sign them, and return them to the Secretary direct, and if votes were given solely because of the merits of the case, and not because of favour or influence, great good would result.—A GARDENER.

— GARDENING APPOINTMENT.—Mr. John Haynes (for several years a well-known successful gardener at Edgbaston, Birmingham), has been engaged as head gardener to — Lamb, Esq. (an opulent Manchester manufacturer), at Studley Castle. There were no less than eighty applicants for the situation in question.

— A ROSARIAN'S LEGACY TO THE BIBLE SOCIETY.—It was recently announced that under the will of the late Rev. E. N. Pochin the Bible Society will receive a sum of not less than £80,000. As the widow, two sons, and daughter were passed over in the will, the Committee of the Society have, after most careful examination into all the circumstances of the case, and under legal advice, felt it their duty to undertake to relinquish for the benefit of the family half of whatever sum the Society may eventually receive under the will.

— BIRMINGHAM GARDENERS' ASSOCIATION.—On the 24th inst. a special meeting of this Society was convened for the purpose of appointing a new Secretary in the place of Mr. John Hughes, who was mainly responsible for the inauguration of the Society. Mr. Hughes' increasing duties in other channels, and more especially as Secretary of the Birmingham Chrysanthemum Society, rendered it necessary that he should relegate the duties in question to some other member of the Association. Mr. W. B. Latham (the Chairman), Mr. Walter Jones, and Mr. John Child respectively acknowledged the invaluable and gratuitous services which Mr. Hughes had rendered towards the Society. Mr. William Deedman (foreman in the Botanical Gardens, Edgbaston) was elected as the future Secretary.

— "GARDEN NOTES FOR THE COLONIES AND ABROAD."—Such is the title of a trade medium that has been issued by the well known firm of Messrs. James Carter & Co. Apart from the fact that there are not, in the ordinary acceptance of the term, colonies "at home," it is all the same apparent that the publication gives a great amount of compressed information on the nature and capacities of many countries as producers of useful products of the soil. It is the second edition that is before us, accompanied by a notification that all the available copies of the first edition were acquired by one of the colonial governments for distribution. This was a good beginning, and it is not at all unlikely that the demand will grow for the first work of the kind we have seen, and which seems to cover all the civilised as well as the recently "tapped" uncivilised portions of the earth. The work in its way has been done well, and there is plenty of it for a shilling.

— ATTRACTION OF FLOWERS FOR INSECTS.—Professor Plateau states in "Nature" that, in seeking for pollen or nectar, insects are guided only to a subsidiary extent by the sense of sight. They continue to visit scented flowers after the coloured parts have been almost entirely removed. When flowers of the same species vary in colour, they exhibit neither preference nor antipathy for one colour over another. Inconspicuous flowers hidden among foliage attract large numbers of insects. Artificial flowers made of paper or calico, even when brightly coloured and closely resembling real flowers, are not visited by insects; but they are when made of green leaves which have a vegetable scent. If flowers which have little or no nectar, and which are therefore habitually neglected by insects, are smeared with honey, insects are attracted in large numbers. On the other hand, if the nectary is removed from flowers habitually visited, their visits cease at once. From all these facts and other facts the conclusion is drawn that the guiding sense to insects in visiting flowers must be chiefly the sense of smell.

— ORIENTAL AND AMERICAN LILIES IN SCOTLAND.—Having been desirous for some time past of ascertaining how Lilies fare in the North-East of Scotland I have learned on inquiry that the following are most successfully cultivated in the county of Aberdeenshire—viz., *Lilium auratum platyphyllum*, generally supposed to be the most enduring of the section to which it belongs, it also produces the largest flowers; *Lilium auratum rubro-vittatum*, the red-banded variety, which is not so strong growing as nor yet so prolific of its flowers as the other auratums; *Lilium pardalinum*, the Californian "Panther Lily," which grows in Aberdeenshire exceedingly strong; *Lilium Browni* and *Lilium Kramerii*, which, though very beautiful, are somewhat sparing of their blooms, while the latter is not very easily cultivated, though originally brought by its introducer, Mr. Kramer, from a high altitude among the mountains of Japan; *Lilium Martagon album* and its more valuable sport or variation, *album superbum*, which grows more vigorously and produces larger flowers. *Lilium candidum*, *tigrinum splendens*, and *Fortuni*; *L. davuricum*, an early blooming Lily from Siberia; *Lilium calcedonicum*, *Lilium Szovitzianum*, a noble variety of the Martagonian sub-genus from the regions of Mount Caucasus, are also largely and successfully cultivated in North-Eastern Scotland.—D. R. W.

— **VEITCH MEMORIAL TRUST.**—At a meeting of the Trustees, held on January 19th, Dr. Maxwell Masters in the chair, it was unanimously resolved that medals for objects to be hereafter determined should be allotted for the present year at exhibitions to be held at Bristol, Leicester, and Cardiff respectively. A sum of £20 was voted to the Trustees of the Lindley Library towards the preparation of the catalogue now in progress. Medals were also allotted to M. Marliac in recognition of his success as a hybridiser, to M. André of Paris, and to M. le Comte de Kerchove of Ghent, President of the Royal Agricultural and Botanical Society of Ghent, for their respective services to horticulture.

— **APPLE COURT PENDÛ PLAT.**—A correspondent writes (on 20th inst.): "I was all round Birmingham yesterday, and only met with one lot of English Apples, and that was Court Pendû Plat." We have for many years found this a reliable and serviceable late dessert Apple in use from January to April. Dr. Hogg, in his "Fruit Manual," states the name *Court pendû* signifies *suspended short*, "the stalk being so short that it sits, as it were, upon the branch." That is precisely its character. It became known as Garnons Apple in Herefordshire through having long been grown without a name in the gardens of the Cotterell family of that city. In Nottinghamshire it is called Woolaton Pippin, from the residence of Lord Middleton. Its popular name is the *Wise Apple*, through the blossoms unfolding so late as to usually escape injury from spring frosts.

— **A DREAM OF THE FUTURE.**—In this beautifully written and very possible outlook (page 52) it is startling to find this sentence, "I seemed to miss the cornfields, but soon perceived they were things of the past." To my mind it is the one great danger impending over this country—the extent to which already we are dependant on other lands for our corn. How many weeks' supply does this country ever contain? and how would the corn ships get here in case of a war? At any instant a war might break out with Russia, then one of our principal sources of supply is at once cut off; if America were also to withhold it we should be brought to our knees at once; if not, famine prices would raise a clamour which would make us seek peace at any price. The storage of corn, and the increase of acres under cultivation, will have to receive attention unless the nation is prepared for the gravest calamities. We are the only country in Christendom—nay, in the world—that is content to accept of such a perilous position.—A. C.

— **READING GARDENERS' ASSOCIATION.**—Under the auspices of this successful Horticultural Association a tea and smoking concert was held in the Abbey Hall on Monday, 17th inst. Nearly 100 members sat down to tea, which was presided over by the President, Mr. C. B. Stevens. The tables were decorated with plants from the gardens of East Thorpe (Mr. Woolford, gardener). After justice had been done to an excellent repast, the Chairman proceeded to propose the usual loyal toast, and in so doing said that they, as an Association, were greatly honoured, for on the occasion of their annual outing, which took place in July last to Windsor, they had not only the pleasure of looking through the gardens and grounds at Windsor and Frogmore, but by her Majesty's gracious permission they were allowed to inspect also the "private portion" of the gardens at the latter place. They were greatly indebted to Mr. Owen Thomas, the Queen's gardener, for having spoken on their behalf.

— **INDISCREET NATURE.**—The mildness of the weather is evidenced in some of the consignments to Covent Garden Market, where there were to be seen last Saturday numerous clumps of Primroses and bunches of Snowdrops. Violets—nearly all foreign—are, it may be added, a drug in the market. The wholesale price is about four bunches a penny for lots of ten dozen, and as these are subdivided by street and shop vendors some idea can be obtained of the profits. Judging from the innumerable letters we have received, Nature is everywhere being deceived. Crocuses are in bloom in Kent, and white Roses in the gardens of the Langland Bay Hotel, near Swansea. In some parts of Lincolnshire Primroses have been flowering for the last week or two, and even Roses may occasionally be seen blooming in the open garden. Pansies are also much to the front, reports from Welling, Kent, and Bournemouth showing them to be quite common. In the latter place the *Doronicum*, which usually comes out in May, is already in bloom. Tales of venturesome butterflies and indiscreet birds, who have brought their young progenies into the world several months too soon, continue to reach us. One blackbird signalled Christmas Day by laying an egg in a nest secreted in the Ivy of the Aylsham Workhouse. A correspondent who sends us the last interesting item also states that he has just seen a nest containing three young sparrows in the Ivy of the workhouse at Swaffham, Norfolk.—("Daily Mail.")

— **PROFITS IN BANANA CULTURE.**—It is remarkable how many people there are among the lovers of fruits and flowers who, in the language of Scripture, "have eyes but see not, and ears but hear not." The cultivation of the Banana is the case in point. Banana fruit is now among the commonest of our fruit in market, and it is within the reach of even the poorest, and yet a quarter of a century ago they were scarcely known, to any great extent, out of the land in which they grew. At the present time, says a transatlantic paper, shipments are made from Jamaica to different parts of the world amounting to 3,000,000 of dollars annually. There is no reason why such an extended culture could not have been started a hundred years ago. It must be said, however, that the cheap and rapid means of transportation, by means of the steamship companies, has undoubtedly had to do with the progress in this industry.

— **THE HESSLE GARDENERS' SOCIETY.**—A large number of members attended a meeting of the above Society, held on Tuesday, January 18th, to hear Mr. Peake, Superintendent of the Hull parks and gardens, read a paper on "Hardy Shrubs and Plants in Towns." Those who had heard Mr. Peake on previous occasions expected a treat, and they were not disappointed. The essayist described the most suitable varieties of evergreen, deciduous and climbing shrubs, classifying them for the different localities according to their powers of endurance and the conditions of the soil. Herbaceous plants and several varieties of florists' flowers then followed, and these were served in a similar manner to the shrubs. Mr. Barker showed well-grown plants of *Cypripedium* *Leeanum*, *C. Pitcherianum*, and *C. purpuratum*, arranged on the table with *Pandanus Veitchi* and Ferns. A vote of thanks to the essayist and Chairman (Mr. J. P. Leadbetter, Tranby Croft Gardens) terminated the meeting.—G. W. G.

— **TECHNICAL EDUCATION IN WARWICKSHIRE.**—The last of a course of lectures on horticulture, arranged by the local Technical Education Committee, was given in the Board School on Monday evening last. Mr. H. Dunkin, F.R.H.S., has been the lecturer, and the interesting and instructive manner in which he deals with each subject is productive of the greatest possible attention from his audience. An average attendance of upwards of forty is a proof that lecturer and subject are popular in the district. The subjects dealt with have been: "Soils and Manures;" "How and When to Plant Fruit Trees;" "Insect Pests and the Mode of Destruction;" "Grafting and Budding;" "Pruning;" and "Vegetable Culture." Pruning was illustrated in a very practical way by several large Currant and Gooseberry bushes (just such as are seen in almost every cottage garden), branches of fruit trees being pruned and each step carefully explained. Mr. Dunkin evidently takes great pains in the preparation of his lectures, the information he imparts being useful and practical; and as he speaks from actual experience it is not surprising they are attended with success.—("Leamington Gazette.")

— **ARTIFICIAL MANURES.**—I could scarcely believe Mr. Dyke was serious in writing that he dressed his Tomato borders, in a house I presume, with 2 lbs. 12 ozs. of artificial manure per square yard. His assertion that after all this is a trifling bulk when it is mixed with 900 lbs. of soil, only shows how terribly poor must that soil have been to need such a wanton bulk of dressing. The analogy drawn from the application of manures with potting soil is not applicable, as in a border, especially broken up 12 inches deep, Tomato plants put out, say, 15 inches apart, would have for root run six times the room and soil they would have in a 10-inch pot. Pot culture of any plant is essentially artificial, and artificial treatment alone will produce success. Planting Tomato plants out in an ordinary soil border can hardly be so described. But 2 lbs. 12 ozs. of these manures per yard means fully 82 lbs. per rod, and just about 6 tons per acre. It is only needful to go so far to show the very costly as well as wasteful form of dressing referred to. Now, one assumption derived from what is told us, and a very natural one also, seeing that the plant and fruit product does not seem to have been one whit the better than Tomato growers ordinarily obtain on ordinary soil, is that the manures mentioned—basic slag and kainit—are either practically worthless, or were not in the form applied utilised by the crop at all. This is not the first time we have heard of soil being poisoned by excessive manure dressings, for here is furnished what ought to be plant food enough at one dressing to serve for a dozen at least. I have seen plenty of fine crops of Tomatoes obtained from very ordinary soil, assisted during the summer with soot dressings or waterings, and occasional very light sprinklings of chemical manures, bearing no comparison to the waste of the applications cited by Mr. Dyke.—A. D.

VEGETABLES FOR HOME AND EXHIBITION.

(Continued from page 30.)

CABBAGE.

No apologies are needed for placing this amongst the most important vegetables. Early spring Cabbage is welcomed as being the forerunner of other favoured vegetables, and the market grower produces nothing more profitable when his facilities are such that he is able to place spring Cabbage on the market a few days before his neighbours. The plant, broadly speaking, may be said to thrive anywhere and under any ordinary conditions, though it gives the best returns in fertile soil and under systematic methods of culture. All members of the Brassica family are gross feeders, and the Cabbage is no exception. Good farmyard manure is the food it revels in, and the plant will appreciate all it obtains in the way of suitable nourishment.

In the cultivation of this crop one important point should never be lost sight of—namely, Succession. The first sowing should take place about the middle of February, and artificial heat being then necessary, it is best to choose an early variety and sow the seeds thinly in boxes, placing this in a propagating pit or heated frame. When large enough, the plants must be pricked out in light soil in a frame, and as the season advances be gradually hardened until they can be removed to their permanent quarters. The soil should be prepared beforehand by deeply digging and incorporating good manure, then lift the young plants with balls of earth attached, so that there shall be no check in the growth, and all other conditions being favourable, a bed of useful summer Cabbage will be the result.

Sowing number two is for the autumn supply, and should be made early in April, though in this case little protection is needed when pricking from the seed boxes. If no ground is actually vacant, the plants may be placed as other crops come off, though it is always well to have a reserve plot, as leaving them too long before transplanting is not an incentive to their well-doing. Cabbage from the second sowing may be obtained tender and fresh late into the autumn, and it is questionable whether the vegetable is ever more appreciated if we except those from the earliest spring cutting.

The third sowing is to provide spring Cabbage, and is allowed to be the most important of the trio. Locality has all to do with the actual time of sowing, as in warm southern districts it would be a mistake to sow so early as in the colder north; therefore no hard and fast rule can be enforced, and sowings may be made from the second or third week in July to the middle of the following month. Good strong plants are wanted to withstand the rigour of winter, but rank overgrown plants are the first to succumb to a severe spell of frost. It is a common and good plan to make two sowings during the period stated—the first of a Colewort, and the second of a good hearting variety of Cabbage. No transplanting is necessary in this case, as the plants, raised thinly, may be removed from the seed bed to their permanent quarters, those not required being left to fill up vacancies in the spring.

Quarters that have carried summer crops are well suited for Cabbage, the soil being rich with manure and fairly firm, as if too loose and friable there is a danger of that rankness of autumnal growth against which we should endeavour to guard. The distance apart varies according to the variety, though from a foot to 18 inches is ample. Planting should take place if possible during showery weather, and failing that water must be given as the work proceeds. The plants should be watched in severe weather, as frequently flocks of half-starved linnets will find them, and very soon nothing remains but a mass of riddled stalks. When the plants commence growing in the spring keep the surface soil stirred with the hoe and draw a little round the stems. At this period a stimulant applied as a top-dressing works wonders, and the difference in the growth of the plants after the dressing is very apparent.

The field of variety among Cabbage is a wide one, and for size and form there are sorts to suit all tastes. Small conical heads are much appreciated at some dinner tables, and where such is the case Little Pixie and others of the same type are admirable for the purpose. Ellam's Early is still a prime favourite as a spring Cabbage, and Mein's No. 1 and Wheeler's Imperial must be mentioned amongst the best. For size and weight Enfield Market and Defiance are two varieties hard to beat and extremely popular, and for sowing in the spring for summer and autumn cutting Early York is very good. It is needless to make more than a passing reference to the usefulness of Cabbage sprouts, which form after the heads have been cut. Frequently these are relied on for succession instead of planting for summer and autumn use, though the latter course is recommended.

In regard to exhibition, I still stand to my argument that the best heads of Cabbage for the dinner table are the best for show, and this theory would, of course, debar those monsters of cultivation that one frequently sees obtaining first prizes over the heads of smaller Cabbages, though superior in quality. Very large Cabbages are rank and strong, and, as a rule, have a huge tough stalk penetrating the heart, which deteriorates their value as an article of food. Medium-sized heads, firm,

well filled with hearts good and sound, are the kind one would naturally choose to eat, and if quality is to be the main thing looked for by judges, then it is such Cabbage that should receive the first consideration on the exhibition table.—GROWER AND JUDGE.

FAIR DEVON.

(Continued from page 28.)

THE Strawberries relied upon are few. Sir Joseph Paxton is the first favourite, and is found far more satisfactory than any others, though President and Princess Alice Maud are included in many plantations. Royal Sovereign has found its way into some of the holdings, but it is not much more than under trial; and it is strange that more varieties have not been tried, especially in the early sections, for necessarily it is mainly upon the early crops that the producers depend. But they find Sir J. Paxton so uniformly reliable that they are naturally reluctant to make a change without any substantial reason. With regard to the distances for planting preference is given to $2\frac{1}{2}$ feet between the plants in the rows, thus allowing more space for the gatherers and for general cultivation. It is considered that the plantations continue profitable for four or five years, and some point to beds that have been in bearing for ten or twelve years, but the latter are exceptional. In my experience, and I believe that is in accord with the majority who have a large extent of land under Strawberries, the plants are very little use after the third year, and some even advocate treating the plants as biennials, though this does not allow much margin for losses occasioned by bad seasons.

One rather interesting fact deserves notice in connection with this part of the subject—namely, October planting is both advocated and practised by some with the object of preventing the plants bearing the first year, as it is found that the second crop is then so much larger and better in every way. One very observant man who has had considerable experience was very emphatic on this point, though it differs materially from the opinion of many growers in other counties. It is usually reckoned that the finest fruits are secured from the one-year plants, and this is undoubtedly what does take place, but whether the crop in an ordinary way pays for gathering is another matter. In favourable seasons with very strong plants early rooted and early planted, the first season's crop will give a good return, but otherwise I am inclined to think there is something in our Devon friend's practice. It has a bearing, too, upon spring planting, which might be expected to exercise a check in the direction of non-cropping in the first season, and for my own part I would sooner plant Strawberries in spring than late in the year, especially if the soil and weather conditions are unsuitable in autumn.

Besides the Strawberries, Cherries of the small black or Mazzard type are extensively grown, the trees presenting a beautiful feature in the landscape when covered with flowers, as they are in most seasons. The average crops of fruits are also very heavy, but are disposed of at low prices, Plymouth providing a convenient market for these, though it is said to be less advantageous for Strawberries, which secure better prices in London, or even more northern cities, notwithstanding the long distance by rail, with the cost and risk of carriage. Taking it altogether, however, this fruit district is an extremely interesting portion of Devonshire, and some of the owners there must regard it very favourably, seeing what a difference it has made in the rental of the land.

A traveller in Devonshire, particularly if he journey by road, cannot fail to have his attention arrested by the peculiar, usually very picturesque or occasionally prim, hedges and wall-like field or road boundaries. The "stone fences" of this county are as characteristic a feature as the "dry walls" of Derbyshire and neighbouring counties, only they have much more in their favour from an artistic point of view. It would not be practicable to construct such boundaries except in districts where stone is very abundant and easily procured; but the soil in many parts of Devon abounds in stone or rock of all sizes, even the arable land is similarly stocked, and the local saying, "Miss a stone and meet a guinea," is supposed to represent equal probabilities. The ploughing or digging of some of the land would puzzle cultivators who have to deal with the mellow stoneless soil of the Thames valley for instance, and the mere handling of a true Devonshire shovel would be a novel experience to most gardeners in northern counties. The instrument is, however, well suited to the character of the soil, the long handle slightly curved downwards towards the base, the large flat heart-shaped blade being turned up at a slight angle, and it is astonishing to see the amount of work a vigorous labourer can get through in soil that could not be dug with ordinary straight-blade spades, or even with forks.

Returning to the "stone fences," which deserve a few words of description, it must be said that they are expensive to form, but

compensation is found in the fact that they require scarcely any further attention, and last for an indefinite time. They vary both in height and width, but the average might be taken at about 5 feet in height, 6 to 9 feet wide at the base, and 2½ or 3 feet wide at the top. A cone of earth is formed proportionate to the size of "fence" required, and this is then faced with stone, and the workmen who have become skilful by long practice at this construct as even and regular faces as the best bricklayers could do. Upon the soil at the apex of the cone young seedling Beech are planted, and are usually protected from cattle for the first few years by a wire stretched along each side projecting from the wall at the top. The cost of such work necessarily differs somewhat in proportion to the size of the "fence," but the usual rate is 3s. to 4s. per yard run, or at least four times the cost of a Thorn hedge, though the cost of keeping and trimming the latter is constant, and in the other case it is practically nil. In a district exposed to strong gales such "fences" afford valuable

Apart from all other considerations, that is the most likely means of leading to constant disappointment and failure. It is unnecessary, too, for there are several firms of nurserymen advertising in the Journal columns who make a speciality of British Ferns, and who send out well-established plants in pots at moderate prices. Unquestionably there is a great degree of interest in growing Ferns found by oneself, but there are few of the species which grow on the stone fences or walls that can be transplanted successfully.—VIATOR.

(To be continued.)

A "CURIOUS" METHOD OF PRODUCING EARLY POTATOES.

As you have thought the "curious" Potato sent you by Mr. W. Brown worth figuring, I have thought you might consider the following worth printing. It may interest some of your readers. In the early

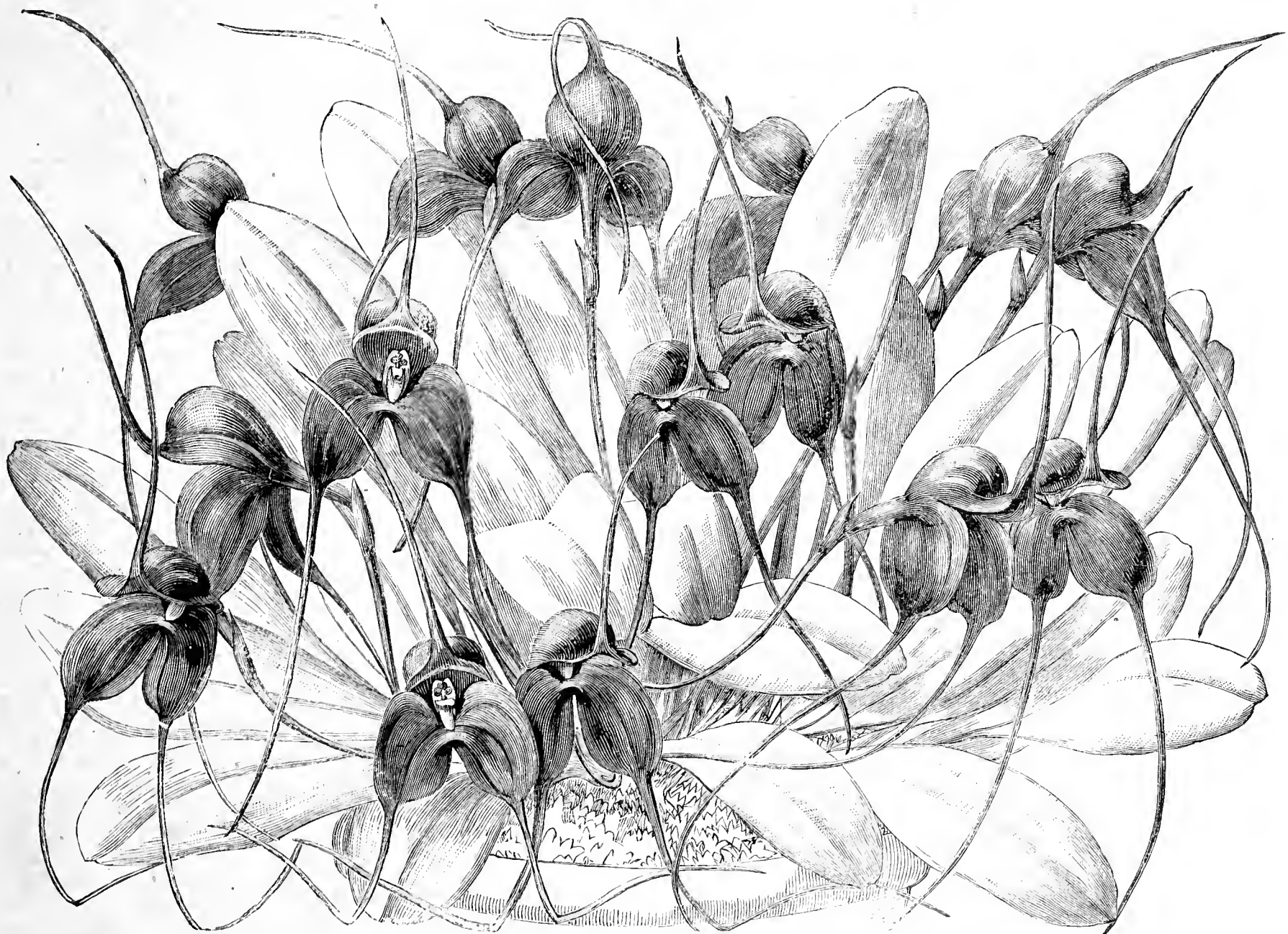


FIG. 13.—MASDEVALLIA ARMINI. (See page 77.)

protection for stock, and very rarely need repair. When the Beech is well established it makes a dense and beautiful hedge, even in winter, as the yellow-brown leaves are retained so long.

Though not an intentional or practical use these "fences" serve another purpose, which can perhaps only be duly appreciated by the lovers of some of our most graceful British plants, the Ferns, that find in the crevices and crannies between the stones a congenial home. It is possible to travel for miles along some of the roads where the fences are older, and to find scarcely one square yard unoccupied by colonies of exquisite Ferns, in some instances diminutive gems, and in others vigorous examples of their respective species. It is a Fern hunter's paradise, but in places Vandals have been busy, and have stripped the "fences" of their natural ornaments. It is doubtful, however, if the charms of our native Ferns are generally appreciated as they deserve to be, for there are many amongst them that will rival in elegance of frondage the most costly and delicate exotics. A proportion do not lend themselves readily to cultivation it is true, but a number can with ordinary care be satisfactorily grown on rockeries and in cool houses. It must not be supposed for a moment that I advocate a wholesale tearing up of wild Ferns by amateur cultivators.

forties, when I was employed in what was then considered one of the foremost early forcing places in Middlesex, and where early fruits and vegetables were cultivated with a measure of success I have never seen excelled, Potatoes were required as early as they could possibly be produced, and this was accomplished in January.

The previous season the necessary number of the largest tubers that could be collected from both farm and garden were thinly stored in the coolest place available. They were, after a certain date, looked regularly over at short intervals, and every attempt at growth checked by rubbing off every growth as soon as it appeared.

Early in autumn the tubers were placed in deep boxes in layers, not too thickly, alternately with finely sifted layers of dry loam. The position chosen for this was a shed in which were two furnaces, and was therefore moderately warm. Very soon a young tuber was forced out from every eye of the old tuber. The crop was examined at intervals, and as soon as they had attained sufficient size the young tubers were removed from the parent, and sent to table in the ordinary way. The crop never failed. The secret of success lay in preventing the exhaustion of the large tubers by being allowed to grow in the ordinary way.—D. THOMSON.

[We well remember this method being practised late in the "forties," and many dishes of new Potatoes from the size of unshelled to shelled Walnuts obtained.]



THE N.C.S. AND THE ROYAL AQUARIUM—A REVIEW.

ALTHOUGH the correspondence which has taken place upon this subject has been somewhat lengthy, no true lover of the Chrysanthemum can fail to recognise that the importance of the question which has been raised fully justifies the space accorded to it, and especially should the members of the N.C.S. be grateful to the *Journal of Horticulture* for so generous a concession of its columns to a matter so vital to their interests.

As a looker-on is said to "see most of the game," will you allow me, as one who has been beside the fray, to state the conclusions to which the correspondence has carried me? The first thing which is apparent is the absolutely one-sided character of the correspondence; indeed, so overwhelming is the predominance of opinion expressed on the one side, and so limited and really insubstantial the pleas put forward by the other, that it is no exaggeration to say that the facts are not seriously in dispute. What, then, are the essential facts? They appear to be these.

For over twenty years the National Society, having under its special charge perhaps the most generally popular and widely cultivated flower in existence, has carried on its exhibitions in alliance with the Royal Aquarium. The N.C.S. has the largest number of members of any special horticultural society, and in those twenty years it has accumulated a reserve fund of £100 (£5 a year), an annual increase for such purpose that has been far exceeded by a local suburban horticultural society.

The holding of the Society's exhibitions at the Royal Aquarium has, even from the first, proved very objectionable to a large and influential class of admirers of the Chrysanthemum, and is probably responsible for the conspicuous absence from the Society's managing body of any substantial number of amateurs of position. Some persons may be attracted by the *menu* provided by the Royal Aquarium, but certainly, to put it mildly, as many, and those at least as influential, are repelled. As a place of exhibition, apart from merely moral or æsthetic considerations, the Royal Aquarium has never provided those essentials of fair competitive exhibition—space and light sufficient to permit of a due estimate by the judges being made of the relative values of the exhibits staged—the wonder being that exhibitors having reputations to sustain should be found willing to jeopardise them by competing under such conditions. How many are deterred we can never know. Nor have there been adequate facilities for the inspection of the exhibits by the public.

But bad as have been these conditions in the past, they have become by degrees immeasurably worse as the patience of the Committee of the N.C.S. has become more and more plainly inexhaustible; and as its Secretary has more and more emphatically and publicly announced his opinion that the Society cannot possibly exist but by the kind consideration of the Royal Aquarium, until in November last, to the unbiassed spectator, there was presented not a thing which by any standard could be considered a show worthy of a National Society, but so gross a travesty of what such a show should be—and this in face of all that an experienced and energetic Secretary could do with the materials at his disposal—that the patience of most members of the Society, if not of its Committee, was exhausted, and the correspondence in your columns followed.

The Royal Aquarium authorities appear to have decided to try the experiment of reaching the "irreducible minimum" which the N.C.S. would put up with, and to weight the cord of the Society's patience almost to the breaking point. The question is whether they have not broken it.

It is scarcely necessary to comment in detail on the arguments *pro* and *con* which have turned on the financial question. Briefly, the Secretary contends that although show after show, resulting in brilliant financial success, has been held in provincial towns, the great metropolis of London cannot be relied on, even with a National Society, to do what Edinburgh has done, and what Birmingham has done, with merely local effort and *prestige*. Figures, purely fanciful, and without any stated authority, have been quoted in opposition to those appearing in his own Society's published balance-sheet. He pleads for the Royal Aquarium that, for recompense for its generosity towards the N.C.S., it has to depend on "the uncertain takings at the gates," and almost in the same breath points out that so great is the attractive power of the Chrysanthemum, that it "attracts to the Aquarium yearly thousands of persons" to see it in its "fullest glory."

Scarcely consistent, perhaps, but can any reasonable being seriously doubt that, given a covered building to keep the rain out, in a fairly accessible situation, this immense metropolis will ever furnish its "thousands," good weather or indifferent, to support a really typical and national show of so universal a favourite as the Chrysanthemum? Does anyone think that a serious financial disaster is really possible?

The "last ditch" of those who uphold the present condition of affairs is that there is absolutely no alternative place to the Royal Aquarium. Truly there may be no place quite so central. But there, surely, all advantage ceases. No place can be more unsuitable in every other respect; in fact, if we are to believe that the provision made by the Royal Aquarium authorities at the late November Show is to represent that to be accorded in the future, then it seems that the question of departure is already settled, and the only point remaining is which of the alternative sites—Earl's Court, the Agricultural Hall, or, possibly, some other place—shall be selected for the holding of the show, or shows, of the National Chrysanthemum Society, freed from the taint of its music hall associations, but supported by the numberless lovers of its special flower.

But, then, we are told by the gentleman himself—the Secretary of the N.C.S.—that if this should be done he will instantly resign his position as officer of the Society. Mr. Richard Dean has done good, very good, service for the N.C.S. So had, before him, the late Mr. W. Holmes. When the latter died there were many who thought that his loss would prove irreparable. It was left to Mr. R. Dean to prove anew the truth of the adage that "there are as good fish in the sea as ever came out of it," and he must not be hurt if it be suggested that the example which he himself supplied has not exhausted the application of the adage. Well, is "the tail to wag the dog," or "the dog the tail?" That is the real question. If the National Chrysanthemum Society, represented by its elected Committee, should arrive at the conclusion that the good of the Society requires the removal of its exhibitions from the Royal Aquarium, then its will must prevail, and must not suffer influence by any such considerations as that suggested.

There are some, as the correspondence shows, who evidently think that the Secretary holds the Committee in the hollow of his hand—and the Royal Aquarium the Secretary. This probably is not the case, but, anyway, the members of the N.C.S. have it in their power to compel obedience to their behests, and the responsibility rests with them.

It has been suggested by some that the Society's exhibitions might be more strictly confined to the Chrysanthemum, and that financial considerations might require that two shows at most should be held by the Society; while others propose that one great metropolitan show, and a provincial show in alliance with local societies in affiliation (as in the case of the N.R.S.), would best serve to render financial disaster impossible, and to erect the Society upon a really sound foundation of *Nationality*. There is much, it seems to me, in this last suggestion.—SPECTATOR.

[Beyond this review, which is the more weighty because of the evident desire of the author of it to be strictly impartial—while recognising "essential facts"—we are unable to afford space for other communications on the subject this week. At the same time we do not absolutely shut the door. We have letters in hand and one in type, though it is not for these the door is left ajar; but rather because if even yet an impartial and unbiassed defender of the alliance of the National Chrysanthemum Society and Royal Aquarium Company should desire to set forth clearly the advantages to the N.C.S. of such alliance, we should not like to deny him the opportunity. As the matter now stands the alliance is admitted and deplored in more than twenty letters which have appeared, because the several writers have been given to understand by one of its defenders that the Aquarium is the dominating partner. The initial note which called forth such a remarkable expression of feeling and opinion, and which led to the reasonable ventilation of a public grievance, appeared in our issue of November 5th, and the discussion has been continued in the nine consecutive issues to the present date. We yield to no one in the sincerity of our desire for the prosperity of the National Chrysanthemum Society, and the stronger and more widely representative it can be made by a far-seeing Committee the greater our satisfaction will be. It has often been necessary to amputate a limb to save a life.]

AN INTERNATIONAL CHRYSANTHEMUM AUDIT IN FRANCE.

To the majority of English cultivators and admirers of Chrysanthemums, the result of the above election will hardly commend itself as being of value. The position occupied by Madame Carnot will commend itself to all lovers of the flower. If there is such a thing as a "best" Chrysanthemum, Madame Carnot surely has a strong claim to the honour; but when we come to Le Colosse Grenoblois, which occupied the second place in the audit, it is rarely seen in England, much less admired. Mrs. C. Harman Payne is regarded as being much too coarse to find favour, and is being fast ousted from whatever high position it once held. Madame Ed. Roger, the new green flowering variety, is placed fourth on the list, actually in front of Vivian Morel, Australian Gold, Phœbus, and Chenon de Leché. At the best, Madame E. Roger can only claim its tint of green to captivate on-lookers, and I am at a loss to

know to what section it belongs. It can only be love for the peculiar that places *L'Isere* before Charles Davis. Fancy, too, Philadelphia occupying a much higher position than Robert Owen, itself one of the best of Japanese incurved varieties. I regard an audit of Chrysanthemums, Roses, Potatoes, Apples, or aught else, in an educational point of view, as being a means of instruction in the selection of varieties. The audit under consideration, however, I regard as being purely a sentimental one.—SADOC.

CHRYSANTHEMUM JOSEPH CHAMBERLAIN.

THIS variety was missed from my list of new Japanese, which I much regret. As an exhibition bloom it should do good service. A seedling from Edwin Molyneux, it possesses much of the brilliant colour of that variety, yet lacks a trifle of its brightness. From the raiser, Mr. H. Weeks, Thrumpton, Derby, I a short time since received blooms gathered from plants growing out of doors, and certainly they were very fine examples, showing what a really deserving Japanese variety it is. Typical blooms are large enough for any purpose, the florets being long, flat, and of medium width. The colour, bright glowing crimson, is a welcome addition, intensified as it is by the golden reverse of each floret.

CHRYSANTHEMUM WHITE MRS. FILKINS.

This is one of the many novelties sent out by Mr. H. Cannell during the last twenty years. Certainly it is not the least important of the additions made to the Chrysanthemum list. In size, form, and character the new comer resembles its parent, but is pure white. For wreaths and bouquets, as well as for the decoration of the dwelling house in vases, a great future lies before this Chrysanthemum.—E. MOLYNEUX.

NATIONAL CHRYSANTHEMUM SOCIETY.

A MEETING of the General Committee of this Society was held on Monday evening last at Anderton's Hotel, Fleet Street, Mr. T. W. Sanders presiding. Much of the business was purely of a formal nature, such as correspondence, notifications of special prizes, and a consideration of the proposed new rules to be submitted to the annual meeting, the chief item of which is the suggested appointment of a Finance Committee. The Classification Committee will hold a meeting on Monday next, to take into consideration various Chrysanthemums of doubtful classification. A rough financial statement was submitted, and also an estimate of the value of the prizes to be offered for competition at the Society's shows during the ensuing year. The annual meeting will be held on 28th February. Several new members were elected.

THE BEST VARIETIES.

THE question may well be asked "Who is to decide?" in reference to the best sixty, fifty, or any particular number of varieties. For my part I cannot perceive any particular gain obtainable from lists which include the oldest and latest introductions so confusedly mixed. What the average amateur grower—and, indeed, the professional, too—is more directly concerned about is the best of the modern or latest novelties. The best twelve, twenty-four, or thirty-six of the season 1897-98 given by the leading experts would impart more valuable information than the tabulating of old and new ones in the order of their individual merits.

Mr. Wells' list includes some that have lost ground, and with many growers are entirely discarded, notably Mrs. C. H. Payne, Madame M. Ricord, Mdle. Thérèse Rey, and International. However, this is but a brief list of objections out of so long a list, and it cannot be disputed that the selection of sorts given is a good one. It could not be expected that Mr. Wells' list would be a counterpart of Mr. Godfrey's; tastes vary, and so do varieties of Chrysanthemums under different growers' treatment. It is strange that *Etoile de Lyon*, which is so universally accounted coarse, should still commend itself to notice and be shown so frequently as it is; and Mrs. C. H. Payne is even worse, size is its only quality, and it is doubtful whether its white sport has come to stay.

The Editor's announcement of a promised list of the best, determined by so large a number of growers, will now be anticipated, and opportunities will be afforded of comparing the select stock and allow of additions to be made where it is considered necessary. Mr. Molyneux's selections have been read with the usual interest, and his advice proved a help to many. A small selection for market work, early, midseason, or late, would be useful to a large section of your readers, so would one for private growers who do not require so limited a selection, because a different purpose is required of them.—W. S., Wilts.

HUMEA ELEGANS.—It is not too much to say that this beautiful plant cannot be surpassed for general effectiveness in the flower garden during the summer months, for whether as a back row to a ribbon border, as a single specimen to sink into the lawn, or to form "dot" plants in the beds, its graceful orange-red drooping plumes have a charming effect, especially when planted near a rivulet or fountain. The culture of the *Humea* is very simple, and I have found that a cool treatment during autumn and winter for those plants intended for planting out is much the best. The seed is sown in the early part of July in pans of well-prepared light soil, placed on a shelf in a warm house, and covered with a piece of glass. When the seedlings make their appearance the glass is removed, and the receptacles placed in a cooler house near the roof glass. When the rough leaf is reached we prick them off into thumb pots, keeping shaded from the bright sun for a few days, afterwards removing them to a cold frame. They are potted as required in a compost of equal parts loam, leaf soil, and well decayed manure, with sand added. On the approach of severe weather the plants should be removed to a suitable house for the winter, the temperature of which is kept at about 45° to 50°.—H. T. M.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

ANNUAL GENERAL MEETING.

AS is customary, Simpson's Hotel, in the Strand, was the meeting place for the officers and friends of this admirable Charity, at the annual general meeting on Thursday last. From a point of view of numbers the gathering was a comparatively small one, but everyone present was a loyal supporter, so that the business was despatched very expeditiously. Prior to the ordinary there was a special general meeting to appoint Trustees, in the place of the late Dr. Robert Hogg, and of Mr. John Lee, who has resigned. The gentlemen selected were the Hon. Walter Rothschild and Bruno Schröder, Esq., both of whom are well-known financiers, and whose appointments cannot be other than a matter for congratulation to the members of the Society. These gentlemen having been unanimously elected, the ordinary meeting was entered upon, under the chairmanship of Mr. Harry J. Veitch. Amongst those present were Dr. Maxwell T. Masters, and Messrs. Arthur W. Sutton, Thos. Manning, A. Outram, W. Cobb, Jas. H. Veitch, J. Fraser, W. Roupell, W. Denning, J. Willard, J. Hudson, A. F. Barron, and W. White (Worcester Auxiliary), with Mr. G. J. Ingram, the popular Secretary. The first proceeding was the reading of the report and balance-sheet for the past year, and readers will find on perusing these how satisfactory is the status of the Society, and how carefully and judiciously it is managed.

REPORT OF THE COMMITTEE FOR 1897.

It affords the Committee considerable satisfaction to submit their annual report for the year 1897, together with an audited statement of accounts, and in doing so they are thankful to be able to record the continued prosperity of the Institution, and its increased benefit to those old and needy people in whose behalf it was founded.

With great pleasure the Committee have to report that the fifty-ninth anniversary festival dinner in aid of the funds held in May last was most successful, and they desire to express their gratitude to the Right Hon. Lord Rothschild for so kindly occupying the chair on that occasion, and for his able advocacy of the claims of the Charity, which met with so liberal a response. They would also gratefully acknowledge their indebtedness to those gentlemen who so kindly served as Stewards, to those who sent flowers and fruit, and to other friends who in any way assisted in making the festival a complete success.

During the past year nineteen pensioners have died, seven of them leaving widows, of whom five, whose cases on being carefully investigated and found to be in every way satisfactory, have been placed on the pension list at £16 a year, in succession to their late husbands, in accordance with Rule III., 13. The Committee have now the pleasure to announce that they have decided to add nineteen additional pensioners to the number now on the funds, ten of whom, having been accepted under Rule III., 5, they recommend the subscribers to place on the pension list without the trouble and expense of an election; the remaining nine will be elected by votes from the approved list of candidates in the usual way. This addition will make the total number of pensioners 168, the largest number of beneficiaries receiving permanent aid since the foundation of the Institution. And yet there will be thirty-five unsuccessful candidates who will perforce have to wait for that assistance which they so much need. The Committee heartily wish it were possible for them to render aid to a larger number, but with financial responsibilities to those now on the funds, which are impossible to accurately calculate, they do not feel in a position to recommend a further increase in the annual expenditure than that entailed by the addition of the number already stated.

In the past year there have been in aid of the Charity held an amateur operatic performance at St. George's Hall, kindly organised by Mr. H. Morgan Veitch; a flower and fruit stall at the Richmond Horticultural Exhibition, kindly arranged by Mrs. Algernon Chancellor; garden fêtes at Reigate and other places, concerts at Altrincham, and various other functions in different parts of the country, to the promoters of which, one and all, the Committee tender their very hearty and sincere thanks. They would also gratefully recognise the self-denying labours of the Hon. Secretaries of the several auxiliaries, which are still attended with marked success, and are the means of creating a widened interest in the good work of the Institution.

It will be remembered that the Committee in their last report announced their intention to send to each unsuccessful candidate at the 1897 election the sum of £5 on June 21st, in honour of the Diamond Jubilee. This they are happy to say was done, and the grateful letters of acknowledgement received from the recipients showed how greatly appreciated were the welcome and, in many cases, timely gifts. The Committee likewise announced that they had inaugurated a fund to commemorate the long and beneficent reign of our beloved Queen—the Patroness of the Charity. This fund, by her Majesty's gracious permission, they proposed to call the "Victorian Era Fund." They are now gratified beyond measure to state that the appeal issued in its behalf was most generously responded to, the sum of £4075 being received, which amount has been invested in the names of the Trustees in Great Western Railway 3 per cent. guaranteed consolidated stock, and the interest derived therefrom will be annually divided *pro rata* amongst those unsuccessful candidates who formerly were subscribers to the Institution, in order to render them some temporary assistance whilst awaiting election, but no candidate may receive more than £10 in any one year.

The Committee would like to mention the names of all those who have so liberally and kindly contributed to this special object; but whilst

gratefully thanking all who did so, they hope it may not seem invidious if they particularise a few generous and munificent donations which greatly helped to secure the substantial amount raised:—His Grace the Duke of Westminster, President; Lord Rothschild and Messrs. N. M. Rothschild & Sons; the Baron Schröder, Vice-President; Harry J. Veitch, Esq., Treasurer; N. N. Sherwood, Esq., Trustee; C. Czarnikow, Esq., Vice-President; Arthur W. Sutton, Esq., member of Committee; George Monro, Esq., member of Committee.

The Committee are happy to acknowledge the following legacies which they have received:—£457 5s. 11d. from the late Mr. J. W. Thomson, formerly gardener to his Majesty King George III., for the purpose of applying the interest for the special benefit of a widow or widows, and £100 from the late Colonel Thos. Page, formerly a life member of the Institution. They also thankfully acknowledge the receipt, just before the close of the year, of special donations to the general funds of £50 from the Royal Scottish Horticultural Society, and £26 5s. from the Royal Caledonian Horticultural Society.

In common with other Charities, the Committee have to deplore the removal by death of several friends and supporters, amongst whom may be mentioned the late Dr. Hogg, a Vice-President and Trustee, who for many years took a warm and practical interest in the Institution, and the late Mr. Richard Chrimes, who for upwards of thirty years had been a liberal subscriber to its funds; the late Lord Hindlip and J. Travers Smith,

BALANCE-SHEET, 1897.

DR.		
To Balance	£929 13 3	
„ Deposit account	2,015 0 0	
„ Annual subscriptions	£1,511 7 0	
„ Donations at and in consequence of annual dinner, including collecting cards to general fund	1,485 7 9	
„ Victorian Era Fund	4,075 0 11	
„ Legacies—J. W. Thomson	457 5 11	
„ Col. Thos. Page	100 0 0	
„ Return of income tax	23 17 10	
„ Advertisements in annual list	49 2 6	
„ Dividends and interest on deposit	£873 2 6	
	<hr/>	
	8,575 4 5	
	<hr/>	
	£11,519 17 8	

We have audited the accounts and certify the same to be correct, and are pleased to state that we have found the books well and accurately kept.

We have also satisfied ourselves that the securities of the invested funds are in the hands of the Bankers.

(Signed) Jan. 18th, 1898.

THOMAS MANNING.
THOMAS SWIFT.
JESSE WILLARD.

In rising to move the adoption of the report and balance as read the Chairman made some trenchant remarks on the features therein, and considered that the details were so explicit as to render detailed references superfluous. He observed that the past year must be considered as the best in the annals of the Institution, both as regards work done and income received. Touching allusion was made to the late Dr. Hogg, and a tribute was paid to his energy in the past, as well as to the services of Mr. John Lee. The Chairman spoke briefly about the Victorian Era Fund, and was of the opinion that the amount subscribed was excellent, more especially when the many calls upon the purses of donors in the Jubilee year were borne in mind. Mr. Gardner seconded the motion, which was carried without a dissentient voice.

The election of officers for the ensuing year was then proceeded with, and, needless to say, Mr. H. J. Veitch was asked to continue in the position he so worthily holds, while Mr. G. J. Ingram was re-elected Secretary, and Auditors and Arbitrators also stand unchanged. Mr. W. Morgan proposed that Messrs. W. Denning, J. Douglas, N. Sherwood, J. H. Veitch, and G. Wythes be re-elected members of the Committee, and that Messrs. E. Ranger Johnson and W. Gleeson be elected in the place of Messrs. R. A. Milligan Hogg and T. Glen, who retire.

Mr. W. Denning moved, and Mr. H. E. Tillman seconded, that Messrs. John Battersby, John Berry, Daniel Brockham, George Daniels, William Davidson, Thomas Ffoulkes, John Mitchinson, John Perkins, John Rolfe, and Silas Warr, whose cases have been investigated and come within the terms of Rule III., 5, be placed upon the pension list without election from January 1st, 1898. This was carried, and having appointed Messrs. A. Outram, T. Manning, and E. J. Monro scrutineers of the ballot the company dispersed until the declaration of the result of the poll.

DECLARATION OF THE POLL.

The result of the polling of votes for the election of new pensioners upon the funds of the Institution was declared at 4.50 P.M. The names of the nine successful candidates for election were read out by Mr. A. Outram, and were as follows:—Henry Ellis, 4249; Thomas Bundy, 3900; Robert Begbie, 3878; James Baker, 3868; Wm. Wood, 3790; David Cornell, 3663; George Hewitt, 3651; Edwin Thomas, 3550; and Lydia

both of whom had been annual subscribers for many years. They have also to record that in consequence of advancing age Mr. John Lee has felt compelled to relinquish his position as a Trustee of the Institution. From its commencement Mr. John Lee has been one of its warmest friends, and whilst accepting his resignation with the deepest regret, they know that as long as he may be spared he will continue to take a special interest in its welfare. It is a source of much gratification for the Committee to notify that the Hon. Walter Rothschild and Bruno Schröder, Esq., have consented to fill the vacant Trusteeships, and they desire to express their sincere thanks to those gentlemen for so kindly giving their services in this way to the Institution.

In concluding their report the Committee have to make the welcome announcement that the fifty-ninth anniversary festival dinner in aid of the funds will be celebrated on Wednesday, June 8th next, at the Hotel Metropole, when his Grace the Duke of Portland (Vice-President) has kindly undertaken to preside, and from a long experience they are encouraged to hope that all those friends who have the well-being of the Charity at heart will again do in this sixtieth year of its history, all in their power to insure the success of the anniversary. And whilst rejoicing in the solid prosperity of the Charity, they still earnestly invite the kind co-operation of its present supporters in procuring new subscribers, so that its work may be not only fully maintained, but enlarged, and the ever-increasing number of applicants helped and benefited.

CR.		
By Pensions and gratuities	£2,953 16 8	
„ Expenses of election and annual meeting	16 11 3	
„ Secretary's salary	£250 0 0	
„ Office assistance	26 0 0	
„ Rent of office	62 10 0	
	<hr/>	
	338 10 0	
„ Printing, including annual reports and list of subscribers, appeals, &c.	110 15 3	
„ Stationery	34 14 6	
„ Books of cheques	4 3 4	
„ Expenses of annual dinner	£210 2 3	
„ Less tickets sold	101 17 0	
	<hr/>	
	108 5 3	
„ Diamond Jubilee address, &c.	7 17 6	
„ Wreath for the late Mr. James Webber	2 10 0	
„ Office repairs	4 13 0	
„ Advertisement	3 3 0	
„ Postages, including reports, voting papers, &c.	56 13 9	
„ Travelling expenses	2 18 2	
„ Carriage, telegrams, and incidental expenses	19 12 7	
„ Bank charges	0 5 5	
	<hr/>	
	355 11 9	
„ Investment (in accordance with terms of will), J. W. Thomson legacy, Indian 3½ per cents.	457 5 11	
„ Investment of Victorian Era Fund, Great Western Guaranteed 5 per cents.	4,075 0 11	
„ On deposit	2,415 0 0	
„ Balance with Treasurer	905 11 2	
„ „ Secretary	2 10 0	
	<hr/>	
	£11,519 17 8	

Rose, 3534. Mrs. Elizabeth McCulloch, who receives 3031 votes, being the second widow on the list, was elected to receive the benefit of the interest accruing from Mr. Thomson's legacy. The interest of this legacy is scarcely sufficient to support a beneficiary, and it was decided by the Committee that the deficiency should be made good from the general funds. Mrs. Elizabeth McCulloch will in future be known as the Thomson pensioner.

It was announced that the poll that day had been the heaviest on record, no fewer than 97,951 votes having been registered. It is a matter of much regret, however, that the spoiled votes should have aggregated to so heavy a total as 1152. Of these 1035 were brought about by the neglect of the voters to sign the ballot papers in the prescribed way. The remaining 117 votes were nullified by reason of the fact that the voters were in arrears with their subscriptions, as according to the laws of the Society votes coming from such quarters cannot be recognised.

THE ANNUAL FRIENDLY SUPPER.

This was held at 6 P.M. in an adjoining room, a goodly number of members and friends sitting down to a well-served repast. A. W. Sutton, V.M.H., Esq., of Reading, occupied the chair. The musical arrangements were, by the kindness of the Chairman, placed in the hands of the Red Band. A lengthy list of toasts, interspersed with vocal and instrumental music, had been drawn up, and after the physical man had been well attended to this was proceeded with. The services of Mr. Mel. B. Spurr of the Egyptian Hall had been secured by the Chairman, and his songs and musical sketches were received with vociferous applause and general pleasure.

After the customary loyal toast had been honoured, the toast of the evening, "Continued Prosperity to our Institution and the Victorian Era Fund," was given by the Chairman. Mr. Sutton said that his association with the Society was a comparatively short one, and dated only from last year, but he was greatly struck with the efficiency of its organisation. He then briefly reviewed the most salient points in the history of the Society. It was started in 1838, and in 1851 Queen Victoria became its patroness and the Prince Consort its patron. In 1864 the Prince of Wales took the place of his deceased father as patron. In 1851 the total

receipts were £748, and a sum of £512 was awarded to thirty-five pensioners. Now the pensioners were 168 in number, and a sum of £3000 was disbursed annually amongst them. Since the Institution was inaugurated £71,000 had been distributed to deserving persons. The year lately closed had been the most prosperous the Society had ever had, for while the total receipts in 1896 were £4739, in 1897 they were £8575, or nearly double. This was of course due to the special appeal for the Victorian Era Fund. Mr. Sutton paid a great tribute of praise to the energy and business ability of the esteemed Secretary, Mr. G. J. Ingram, and mentioned a case where, owing to foresight and promptitude, Mr. Ingram had obtained from the legacy left to charity by Mr. Thomas Gibbs £250 for the Society. In conclusion he expressed his regret that the Institution could not help even more than it had done and was still doing. He coupled with the toast the name of Mr. H. J. Veitch, who, in responding, said that he, in common with all the officers of the Society, was actuated by a desire to do his best. He then proceeded to supplement the facts, showing how well they had progressed, which had been given by the Chairman and by others, dealing especially with the last ten years. The funded property of the Society ten years ago was £21,000, but at that time the interest in Consols was reduced, and a larger amount had to be invested to make up for this. Now the vested funds amounted to £29,000. Ten years ago they had 126 pensioners, now there were 168, more pensioners having put on the books during the last two years than in any other three. Ten years ago there were no auxiliary societies; now there were several, including a very healthy one at Worcester. He was sorry to say, however, that practical gardeners did not support the Society as they ought to do. Mr. Veitch mentioned the shadow that had passed over them in the loss of the two Trustees, Dr. Hogg and Mr. John Lee. Speaking of the Victorian Era Fund he said it was destined for the relief of unsuccessful candidates who had been subscribers. He had made a calculation with regard to the amount of money to be paid to those who benefited under this fund, and it would range from £10 downwards, according to the respective lengths of their subscriptions. They required £5000 to complete the scheme, and although they had not been able to collect all this the fund was still open, and he hoped yet to see the full £5000 in hand.

Mr. Bunyard proposed "The Committee," coupling this with the name of Mr. Owen Thomas. He was pleased when Mr. Sutton joined the Committee, as he felt sure that the Society would profit by his business ability and experience. Mr. Owen Thomas, in replying, spoke to his regret at the absence of Mr. G. Munro. He thought that the Society could well congratulate itself on its satisfactory position. It was to Mr. H. J. Veitch that they were indebted for the establishment of the Victorian Era Fund. In the absence of the Rev. W. Wilks the toast of "Our Country Friends and Supporters" was given by Mr. H. B. May, Mr. J. H. White, of the Gloucester Auxiliary, replying. Although they had nearly been jubileed to death at Gloucester, he said, their contributions amounted to 250 guineas during the twenty-seven months their branch had been started, and he hoped to be able to send further substantial sums in the near future. He thought that every county should have its auxiliary society. Mr. N. N. Sherwood gave "The Chairman," who suitably responded.

A most enjoyable evening was spent, and this was largely due to some capital songs by Messrs. Fred Bevan, J. H. White, concertina solos by Mr. Fred Bevan, and a cornet solo by Mr. Edwin G. Munro, all of which were much appreciated and heartily applauded. The arrangements altogether reflected great credit upon those who organised and executed them.

BRIEF NOTES ON ALPINE FLOWERS.

(Continued from page 18.)

POLYGALA CHAMÆBUXUS.

THE Box-leaved Milkwort, as it is popularly termed, is one of the dwarf evergreen shrubs which are alike useful in or out of bloom. It is neat in habit, and its little flowers are very pleasing with their Pea-like blooms. *Polygala Chamæbuxus* is by no means a new plant, its introduction dating back to more than 230 years ago. By the seventeenth century botanists the plant was named *Chamæbuxus*, from Greek words signifying "low-growing Box." On the adoption of the name *Polygala* the former generic name was retained as the specific one.

The Box-leaved Milkwort is partial to a peaty soil with a fair amount of sand intermixed. It may also be grown in soil of a heavier texture, and in this will grow taller and more robust looking. In light peaty soil its height is from about 6 to 9 inches, but in that of a stronger character it may grow 1 foot high. It was introduced from the Austrian and Swiss Alps, and it has been observed that on the granite formations, and particularly in the Southern Tyrol, the variety with purple flowers occurs. The ordinary species has small Pea-shaped looking flowers, white and pale yellow at first, the latter colour afterwards deepening to dark yellow, and on some parts to brown. The leaves of the plant are fairly well described by the popular name of "Box-like" Milkwort, and much resemble those of the dwarf Box used for edging walks. It comes into bloom in April (or in late seasons May), and flowers for several months.

P. Chamæbuxus is not a difficult plant to propagate, the process being effected by taking off slips or cuttings with a "heel" of the old wood attached, and inserting these in small pots filled with light soil and surfaced with sand. These pots are then carefully watered and kept close and shaded for some time. Plants which are of some size may be divided in the end of August or in September. One cannot recommend too highly this neat little Milkwort.

LEIOPHYLLUM BUXIFOLIUM.

This little plant has as many aliases as a professional rogue. These have given, and still give, a good deal of trouble and annoyance to gardeners and others. It has been named *L. Lyoni*, *L. prostratum*, *L. serpyllifolium*, and *L. thymifolium*, as well as *Ledum buxifolium*, *L. serpyllifolium*, and *L. thymifolium*. I received it under the name of *Ledum Lyoni*, but the authority of the Kew "Index" is ample warrant for the use of the name of *Leiophyllum buxifolium*, which is here adopted. To judge by appearance *L. serpyllifolium* or *L. thymifolium* (which latter name Maund says applies to the small-leaved form) would be more in accordance with the leaf features of this pretty Sand Myrtle.

It comes from Carolina and the Pine barrens of New Jersey, and was introduced in 1736. Its full height is about 1 foot, but it does not often grow so high, and from 4 to 9 inches is more commonly its stature. It belongs to the natural order of *Ericaceæ*, and is of compact, bushy, and evergreen habit. The small, pinkish-white flowers open in May or June, and grow in corymbs at the ends of the branches. The leaves are small,



FIG. 14.—OLEARIA STELLULATA.

and in autumn some assume a reddish colour. A cool situation in sandy peat is that recommended for *L. buxifolium*, and care must be taken that it never becomes too dry or the leaves may drop. It is increased by careful division or by layers.

OLEARIA HAASTI.

It is not every one of the Daisy Bushes which can be safely planted in the rock garden without some winter protection. Haast's Daisy Bush is, however, the hardiest of all the *Olearias*, and is pleasing in winter or spring with its glossy evergreen leaves, or in autumn with its heads of white Daisy-like blooms. It comes into flower in August, the flower heads being arranged in cymes. The leaves, which are about an inch long, are elliptical in form, and are glossy green above and white beneath.

O. Haasti grows from 2 to 4 feet or more high. It is a native of New Zealand, and seems to thrive well in almost any soil. I think it inferior in beauty of flower to *O. stellulata* (fig. 14), but for the decoration of the rock garden in winter it has some advantages by reason of the greater brightness of its foliage. It can easily be kept within bounds by pruning or cutting back. The recognised method of propagation is by means of half-ripened shoots put into sandy soil, under a bell-glass, and shaded. I have, however, successfully struck slips or cuttings, taken off with a heel, and placed in pots in a greenhouse.—ALPINUS.

(To be continued.)

THE TROPICAL SUMMERS OF 1896-97: THEIR EFFECTS ON THE FRUIT TREES AND FRUIT CROPS.

IN reviewing the many-sided effects of the tropical summers of 1896-97, the facts range themselves as favourable and unfavourable. The tropical heat, combined with drying winds, and that general absence of rain during the spring months of the period under notice, dried the soil to an unusual extent; and although in 1896 abundant autumnal rains fell, in 1897 the months of September and October were the driest known for years. The effect of the heavy rains of the autumn of 1896 was felt in the activity of the sap and the adhesion of foliage on fruit trees rather later than usual, and consequently the trees did not get that rest which is as necessary for the vegetable world as for the animal creation; and we agree with Mr. R. D. Blackmore that the general failure of fruit crops in the spring of 1897 was largely due to that cause.

There was a want of power in the trees themselves to lay up the necessary nutriment, and ability to perfect embryo fruit buds, at a critical period, [and as reported in the gardening papers, many cases of imperfect blossoms were noted in fruits, and doubtless many more facts would have been discovered had they been suspected and looked for. To outward appearance the blossoms were perfect, the corollas being bold, as usual; but in many individuals either stamens or pistils were wanting, and no doubt also the upper or fruit-nourishing roots suffered from the want of surface moisture, and thus were prevented from doing their work—while lower anchor roots struck deeper and deeper to gain moisture and sustenance for the development of the tree, making it less fertile, and adding gross wood to all garden trees, and thus trees were found to require root-pruning more than usual to restore that relative balance of fruit and wood-producing power which a well managed fruit tree should exhibit.

In orchards (especially among young trees) the lack of fruit was a distinct benefit, as the trees were better able to form vigorous growth before starting to crop, and thus lay a foundation for full development and after success: as if a young orchard tree commences to crop in its earlier stages, its after-growth is checked for years, and in the future such checked trees produce pecks where bushels of fruit should be garnered. In the dry autumn of 1897 matters were different, and the glorious and gorgeous colours of the foliage on Cherries, Peaches, and Nectarines, and the fine russet-brown of the Apple foliage, and the golden Plum leaves, leads us to infer that Nature's work has been well and truly done, and with a fair spring a good all-round crop may be anticipated in 1898.

Although from a nurseryman's point of view the shorter and stouter growth fruit trees made in 1896-97 meant some loss and extra expense in staking standard trees, still the growers cannot fail to be great gainers in having the wood of fruit trees well ripened, hardened, and consolidated for future benefit, as heavy frosts tell much less severely on such perfected trees. If this is felt in the south, how much more must it benefit planters who live in the midland and northern counties! The pretty fruit shown by Mr. Day from Galloway, and the grand Pears from Mr. Divers, Belvoir Castle Gardens, sent to the Royal Horticultural Society, bear out this fully.

The fruit crop of the Jubilee year, 1897, will be noted in our minds for its remarkably high colour and development more than for great size. Many examples submitted to us have been beautiful beyond all former years: for example, crimson Blenheim Orange Apples, Warner's King, and other green Apples with scarlet flushes on the sunny side. Doyenné du Comice and other Pears had lovely red cheeks, while many Russets lost their character and come out with golden skins, only broken here and there with russet. Many of the less hardy Apples, as Lord Suffield, Ribston Pippin, King of Pippins, and Glou Morceau, Bergamot Esperen, Gansel's Bergamot, and other Pears, have been so handsome and good that planters have called for them freely, forgetting that they are not to be relied upon (as a rule) for freedom from canker or quality. Their extra good appearance and flavour point a moral, and doubtless we ought to place these and similar good but variable Apples on walls or in warmer places. Apples of the type of American Mother, Melon, Scarlet Nonpareil, Allen's Everlasting, Duke of Devonshire, Sturmer Pippin, with those that do not always ripen well, such as Calville Blanc, Boston Russet, Calville Rouge, Reinette du Canada, Dutch Mignonne with Beurré Diel, Bergamot Esperen, Olivier des Serres, Beurré Rance, Beurré Baltet, President Osmonville, Easter Beurré, and Zéphirin Grégoire Pears, would not be out of place on many walls which are well situated, and now devoted to a doubtful crop of Peaches or Nectarines, especially those old walls, unpointed and full of nail-holes, one often sees in ancestral gardens, where choice Pears and Apples would flourish and give good results.

The extended use of large and handsome Apples for decoration should lead growers to place Peasgood's Nonesuch, Buckingham, Belle de Pontoise, The Queen, King of Tomkin's County, Twenty Ounce, Gascoigne's Seedling, and others on walls for this purpose.

One special feature of the 1897 fruit crops was the general success of the British raised varieties, such as Nonpareil, Northern Greening, Wyken Pippin, Blenheim Orange, Devonshire Quarrenden, Yellow Ingestre, Stirling Castle, Wellington, Ecklinville, Kerry Pippin, Keswick Codlin, Winter Queening, Nanny, Hornead Pearmain, Lane's Prince Albert among Apples; and Hessel (Hessle), Althorp Crassane, Hacon's Incomparable, Bishop's Thumb, Pitmaston Duchess, Crawford, Aston Town, Eyewood, and Knight's Monarch among Pears, causing a demand to arise for trees of many old and superseded kinds, which for market purposes are yet valuable. The general crops on the Codlin and early Apples and

Pears need only to be noted to state the fact that such kinds have time to recover themselves after the fruit is gathered, and so prove regularly fertile.

Exceptional prices have been made of some fruits. In our district Devonshire Quarrenden, Yellow Ingestre, and Ribston Pippin Apples sold well (one grower selling 100 bushels of the latter as gathered at 14s. 6d. per bushel), while Cox's Orange Pippins made up to 25s. per bushel retail, and Wellingtons, with a Peach-like colour, made 10s. 6d. wholesale.

As might be expected, the heat and drought has caused all late Pears to ripen months before their usual season, and by the time this is in print many fruit rooms will scarcely have a Pear in them. At present Olivier des Serres and Beurré de Jonghe, with a few Easter Beurré from open trees, are all we possess. But we are inclined to think thorough ripening will allow us to keep Apples as late as usual, though they will certainly not be so large; in short, beauty will compensate for mere size.

Perhaps no outside fruit felt the grand weather of 1896-7 more than Peaches and Nectarines on walls. The trees made that reddish wood so dear to the cultivator's eye, and the crop set well; while the fruit where the trees were copiously watered grew to a fine size, and coloured to perfection, raising the almost lost hopes of many old gardeners to encourage them to persevere in their open-wall cultivation; those who had late Peaches made long prices, as the fruit under glass was forwarded by the heat, and thus made a market for the outdoor crop. Peaches and Nectarines are yearly more in demand. We attribute the failure of the Plum crop to the causes already named, which by their surface-rooting nature would naturally be affected more than deeper-rooting fruits.

We cannot refrain from again cautioning gardeners from relying on a few varieties for an annual crop; and the best for quality should be planted in various positions to insure a return, and also to lengthen the season of each kind. Market growers naturally go in for the sorts favoured by the public, but we are inclined to think many less known but reliable croppers should be introduced. Strawberries, Raspberries, and bush fruits generally cropped where good deep cultivation was practised.

In conclusion, it is evident that cultivators should do all in their power to utilise all the sunshine possible, and the protection they possess added to careful thinning of boughs and fruit, and by giving liberal encouragement to the trees that crop, and not over-stimulating those that are barren.—(*Read at a meeting of the Horticultural Club by Mr. GEORGE BUNYARD, V.M.H.*)

EUPHORBIA JACQUINIÆFLORA.

IT is at this season of the year when the beauty of the few remaining Chrysanthemums is daily decreasing that any gorgeous display of floral beauty is bound to be more than usually appreciated. I do not recollect for some years having seen so pleasing a display as that made by a grand group of the winter-flowering plant under notice, together with their well-known relative the Poinsettia, as in the conservatory of C. E. Lambert, Esq., at the Manor House, Effingham, this week. Not only are these plants grown as successfully there as I have ever seen seen them, but the able gardener, Mr. G. Bristol, is an adept in effective grouping. Contrast these brilliant colours mounted in a bank with Arums, white Azaleas, Roman Hyacinths, and Freesias, with the graceful foliage of Ferns and Cyperus alternifolius, and you have an association the beauty of which is better imagined than described.

As the Euphorbia mentioned does not seem to be so generally grown as its attractiveness at this season demands, the few cultural hints I here-with append may be of use. Propagation is effected by cuttings. The old plants having ceased flowering, they may be laid on their sides and water withheld in any structure with a temperature not lower than 45°. At the end of six or eight weeks they should be introduced into a brisk heat with their stems intact; young shoots will soon appear, which, if taken off when about 3 inches long with a portion of the old wood attached, make the cuttings.

These are best placed singly in thumb pots in a mixture of two parts peat and sand to one of fibrous loam, plunged in bottom heat of about 80°. As soon as rooted more light and air must be given, a shelf near the glass with brisk heat and moist atmosphere being chosen; in this position the pots soon become filled with roots. It will then be necessary to transfer the plants to their flowering pots, the 6-inch size being most suitable. Care must be taken in removing them not to break the ball of roots, but shift them as nearly as possible without disturbing the soil.

The compost should be formed of two parts good peat, two parts loam, to one of sand. The plants ought then to be placed in a light house or pit with warmth and a fair amount of sunshine, shading only for an hour or so from the midday sun. In August shading may be altogether dispensed with, and they may be plunged in cold pits or frames, so that their growth may become well matured, as upon this in a great measure the size of the bloom depends. A little stimulant may be given once a week when the pots are full of roots, withholding gradually as the flowers develop.

In September the plants should be removed into the house and syringed daily, not only to keep down mealy bug and other insect pests, but to promote free and healthy growth. Under this treatment sprays of bloom may be produced from 10 inches to a foot in length, and the plants become well worthy of the attention bestowed upon them. The enclosed sprays are forwarded as samples.—W. R. G.

[The sprays are bright, broad, and beautiful, and highly creditable to the grower of them.]

APRICOTS.

(Continued from page 31.)

PROPAGATION.

I DO not know what effect the stock has on the Apricot, beyond the fact that seedling Apricot stocks do far away the best on warm sandy soils. Moorpark and Peach Apricots come true from seed, but that is no reason why seedling Breda, Blenheim, or Shipley's should not be used as stocks. The stones ought to be sown as soon as ripe 3 inches deep in light rich soil, covering with a little litter in winter. After a season's growth lift, shorten the tap roots to 4 inches, plant in rows a yard apart and 2 feet from plant to plant. The stocks can be budded about the middle of June at 6 inches from the ground, not nearer and not much higher, and in another year we have maiden trees, the snagging being done before growth starts in the spring. The maidens can be headed in the autumn to about 12 inches from the ground, as there is then less danger of gumming.

There are Plum stocks, Mussel, St. Julien, Brussels, and Black Damson, but I could never make out which was which, except the "riders" evidently on Brussels, by the looks of the worked trees; and as for report, those stated to be on Mussel and Brussels were the healthier, the St. Julien and Black Damson manifestly liking a stiff soil—not one for Apricots. The trees gum fearfully, and no one ever ought to plant a gummed tree. The reticence of nurserymen about stocks, especially for stone fruits, is very noticeable. Will any knifeman kindly say what influence the stock has over the scion? for though the latter may overrule the former, there is often such difference between trees on assumably the same stock, that either these are themselves unhealthy or the scions must be full of disease plasma. Of all the questions appertaining to horticulture that of stocks is least understood by those having to produce fruit, and no one steps in the arena to elucidate the subject in a practical manner. In other fruits we know exactly on what stock the trees are, and thus can act according to requirements and of the fitness of trees to soil and position; why not in Apricots?

TRAINING.

The fan shape only is suitable for the Apricot against walls, and the greatest blunder made is in originating the branches too closely together, so that they join against each other and give rise to gumming. Keep, therefore, at least three fingers distant between the side branches of the young tree, and though this means but three, or at most five, branches the first year the distance best serves in the end. Any number of branches can be secured by pinching the central growths in June, and these will ripen sufficiently to withstand the severest weather, against walls. I hardly know how to describe the training of an Apricot tree against a wall, but it may be explained as a desire to cover the space equally from bottom to top in the shortest time. The main growths are trained in full length, and side shoots push so freely that there is seldom any difficulty in filling up the spaces between the main limbs.

Thus in summer the shoots are trained at certain angles upward, and the whole area is occupied as the trees advance. It is an art of covering space with branches at certain distances, with side growths between them for bearing. About two trimmings suffice—namely, one about midsummer to regulate the growths over the surface, and cutting back to two or three leaves shoots not required. Nothing could be more simple. The winter pruning on the old-fashioned lines is done in the early spring, the buds then swelling, useless growth cut out and the most promising retained, forerights and refractory spurs being shortened or cut clean away. It is useless to tell an Apricot grower of the old school that this would be better done as soon as the trees are cleared of their fruit, all superfluous shoots being then removed, any excess of growth left on the shoots cut back, and every effort made to perfect the wood. This all goes for nothing, and certainly is better left alone when it results in forcing growth instead of solidifying that already made. Truly, the go-as-you-please and spare-knife treatment suits the Apricot, health going with the extension, and the reverse, with gum, to the restriction system. Beyond this we need not further proceed at present, as the chief points are to plant the trees, train them so as to cover the wall space, and then the fruit will come if the other conditions are favourable.

PROTECTION.

The most unfavourable circumstances are those of the weather at flowering and setting time, especially in low-lying districts, as a night's frost may destroy the prospects for a year. The spouting of dwellings, kept in a proper state, act as sort of coping, and a double thickness of herring nets, secured to the brackets of the spouting, and let down in front of the trees to within 18 inches or 2 feet of the ground, securing there and taut, usually affords the needful protection; indeed, I have never known this simple mode of protection fail to efficiently resist the radiation of heat and the keeping at bay of frost for the safe cropping of Apricots on cottage walls. There is the heat and dryness of the wall as compared with a garden wall, and this, with free access of air at all times, implying a sturdy and hardy blossom, goes a long way with the Apricot. The netting also comes in handy for protecting bush fruit against birds, so that, all points considered, nothing better can be advised for cottagers and farmers than old herring nets.

Nevertheless, cottagers often have recourse to means that few would think of service. Twiggy sticks, such as Hazel, can be utilised similarly to herring nets, securing the sticks so as to form a sort of network, thickest at the upper part of the wall, but all over some of the twigs in front of the blossoming trees, and this sieve-like protection alike

prevents the heat radiating, and the cold from coming in to the trees. I have known the easy plan answer on a cottage wall when trees on the garden wall near by have been practically ruined by a protection of evergreen boughs. The Apricot blossom wants air and light, and these secured a little protection serves better than much.

Another plan used by a farmer who had poles for nothing was to place these just under the spout and in a channel cut towards to the wall 6 inches deep, 18 inches from it at the base, the poles being 4 feet apart and secured by soil at the foot. Soft straw bands were then twisted, stout, medium, and thin, and the first placed topmost next the spout of the building, running with the wall and about 6 inches apart; the next lot similar, and likewise the lower lot, all secured to the poles and drawn tight. The straws stuck out from the bands, and being hollow formed excellent non-conductors of heat and protection. The thickest bands were not more than two fingers in diameter, the medium about the thickness of the thumb, and the small equal to the stoutness of a finger. The bands told a tale, not in one year, but during the lifetime of the farmer, who planted the trees during the year of his marriage, and his son of three decades followed in his steps, the two trees occupying an area of 20 feet by 18 feet each, and bearing respectively 100 dozen fruits—choice Moorpark, which, at the wholesale price of 1s. 6d. per dozen, realised £15, besides supplying the requirements of the household.

I have seen cottagers improvise old sheets, anything handy, on sharp frosty nights to hang in front of the Apricot trees, and those not afraid of a little trouble, horny hands, and practical brains, always had Apricots when, as before stated, there were but few in the parson's or squire's gardens, the produce ever being in demand by the ladies of the large residences near. They prefer home-grown produce, and only buy Apricot concoctions in pots now because the home supplies are alike uncertain as inadequate. The copings of garden walls, and the poles with woollen netting or scrim canvas contrivances for letting down and drawing up by means of pulleys, are hardly the sort of thing to recommend for cottage and farmhouse walls, for besides the first cost and the requisite daily attention, there is little use for them during the remainder of the season, hence they are not advised where remuneration is the prime object, the simpler means of protecting being better and efficient in a generality of seasons. Whether the expense of such contrivances has anything to do with the abandonment of Apricot culture on walls may be a moot question now that so many gardens are really market gardens. I make no question of glass copings being the best for garden walls, and with coverings suspended from them, and drawn up in the daytime, there is no reason why Apricots should not be grown in gardens at a liberal return in produce for outlay in material and labour. In certain localities glass cases may be necessary, but this is a phase of the subject only referred to incidentally in the case of endeavour to grow more for the love of things than for profit, as neither the wall nor the soil suits in a majority of cases. We know gardeners can do anything they set their minds on, but unless we get a dwarfing stock for Apricots, or have such dwarf and prolific growers as Kaisha, it is worse than useless planting Apricot trees against ordinary garden walls for marketing.

The protection should not be applied until the trees are starting into bloom, it being better to lose the first flowers than attempt anything in the way of coddling. When the first flowers, however, are fully open, then is the time to put up the nets, sticks, or haybands; and once up let them abide until the trees have produced leaves, and these form a natural awning against frosts. This will usually be some time in April or early in May, the late frosts seldom having any effect on Apricots but the coddled under thick coverings, and then as tender at the end of May as the others are hardy right along; but take off half the netting, sticks, or straw ropes at a time, always commencing the reduction in mild weather, and the final clearance under similar conditions.—G. ABBEY.

COLOURED LIGHTS AND PLANTS.

UNLESS exposed to sunshine plants would never acquire their proper colours, elaborate their various secretions, or properly mature their seeds. This sunshine, or white light, as it is called, consists of several coloured rays, which are known to possess very different illuminating, heating, and chemical properties. Hence it has become a subject of great interest to examine and determine whether all these rays are alike in the development of vegetation. The solar beam of white light, when subjected to prismatic analysis, is found to consist of seven or more distinct colours—viz., orange, red, yellow, green, blue, indigo, and violet, all produced, of course, from a mixing or mingling of the three primary colours—red, blue, and yellow.

Of these the red rays evolve the greatest quantity of heat, the yellow the largest amount of light, whilst the blue produce the strongest chemical effects. It naturally follows, then, that by the use of glasses of these colours the natural conditions of a plant may be very greatly altered, for heating rays may be admitted whilst light and chemical effect are excluded; or light may be given whilst heat and chemical effect are withheld; or, lastly, the maximum chemical power may be afforded without exposure to light or heat. Seeds and plants treated thus furnish the following results:—

Under yellow glass the germination of seeds was prevented, or if it took place the plant soon died. Agarics and the fungus tribe generally flourished luxuriantly under the influence of the yellow glass. It is thought that although the luminous rays are injurious to vegetation in its early stages, in the later developments they are really essential to the formation of woody fibre. Under red glass germination takes place if

the seeds are properly cared for. Such plants, however, are unhealthy, and the leaves in a measure blanched, showing that the production of the chlorophyll or green colouring matter had been prevented or interfered with. Most vegetables, instead of bending towards a red light, as they do towards a white one, bend from it in a very remarkable manner.

Plants in flower can be preserved for a much longer time under the influence of red light than any other, and scientists opine that red media are of great benefit during the fruiting of plants. Blue glass has the power of altering the free passage of all chemical rays, whilst it obstructs both the heat and light radiations. The rays separated from these latter have the power of accelerating in a marked degree the germination of seed and subsequent growth of the plant. In fact they become too stimulating. This being discovered, plants removed into yellow rays, or, better still, into light which has passed through a green glass, were found to deposit more carbon, and consequently formed woody fibre in a regular and proper way.

Thus it follows from these evidences and like results that the germination of seeds in spring, the flowering of plants in summer, and the ripening of fruits in autumn, are dependant upon the variations in the quantities of actinism or chemical influence of light and heat, at those seasons, in the solar beams.—WM. NORMAN BROWN.

MILDNESS OF THE SEASON IN SCOTLAND.

NATURE is at present in an unusually mild and amiable mood. The winter has been one of quite exceptional geniality, and plants of every kind in South-Western Scotland are in a very advanced condition. Should existing atmospheric influences continue to prevail without any intervening visitations of frost, fruit trees are likely to have an abundance of blossom, especially as—partly owing to the destructive storm in June of last year—they have had an exceptionally long period of repose. At the present moment the horticulturist has reason for self-congratulation, but it is much too soon for confident hope, which becomes not seldom during the early months of spring “near neighbour to despair.”

Though the Snowdrop appears to be somewhat late with Mr. S. Arnott this season, it has bloomed in my garden quite as early as usual, if not indeed somewhat earlier than it came last year. During the dreary period that has intervened since the latest variety of the hardy Chrysanthemums disappeared from our vision my chief consolation has been *Jasminum nudiflorum*, one of the sweetest and gentlest, notwithstanding its heroism, of winter flowers, and it is still flowering exquisitely, with the Snowdrop at its feet, on a sheltered north wall. The most attractive flower on the south wall of my garden, where it is at present growing with great rapidity, and will ere long be unfolding its tenderly beautiful, Snapdragon-like, miniature flowers, is *Linaria cymbalaria*; of which, in his comprehensive work on “The Natural History of Plants,” Herr Anton Kerner von Marilann has expressively said: “It raises its flower-stalks from the stone wall over which it creeps towards the light; but as soon as fertilisation has taken place, these same stalks, and amid unchanged external conditions, curve in the opposite direction, so as to deposit their seeds in a dark crevice.” Notwithstanding its peculiarly refined and fragile aspect, few flowers have such a strong constitution as this. Equally remarkable is its rapidity of growth.

Almost for the first time within the range of my remembrance I have fragrant *Auriculas* at present in bloom. It is seldom indeed that their flowers appear in my garden before the month of April, of which it is undoubtedly, especially in the matter of fragrance, the predominating attraction. *Prunus pissardi* is forming its flower buds, and signs of activity are visible along the branches of the Almond tree. *Andromeda floribunda*, whose classical name was conferred upon it by the great Linnæus, and which belongs to the Ericaceous family or order of plants, will soon be in flower. Rose trees, inspired by the mildness of the season, are throwing out prematurely their graceful shoots crowned with buds that will never develop into their possibilities of beauty for lack of the generative influence of the sun. As an accomplished rosarian said to me in one of his letters, written during a very similar season, “Like naughty children, they will not go to sleep.” It would be better for themselves, in all probability, if they sought repose.—DAVID R. WILLIAMSON.

F.R.H.S. AND SO FORTH.

AM I as a Fellow of the Royal Horticultural Society entitled to place these initials as an affix to my name, or not? That is the question. Those who are recipients of the medal of honour may use the initials V.M.H., but they must do it in fear and trembling, lest they incur anathema, or reprimand. But how stands it with the F.R.H.S.? I have been induced to ask this question because I could but notice, when looking over, as published in your columns, the lists of the new Committees of the R.H.S., that whilst nearly every member of that very learned body, the Scientific Committee—there are thirty-four of them—has the initials of some society after his name, not one, even the undecorated, has F.R.H.S. Are these learned societies' fellowships so very dignified that they are thus paraded, or are those of the R.H.S. so much the reverse that they are not so employed? Possibly it may be said that as the Committees are those of the R.H.S., and as only Fellows are eligible to be members of these Committees, to attach F.R.H.S. after each name would be superfluous. That may be so, but where some initials are so paraded why not others?

What is so curious, too, is that whilst fellowships of three Societies only are recognised, yet affixes quite as honourable, not even the V.M.H., are attached to any member of the other four Committees. That is more than curious—it is funny. However, to revert to the question raised above. I notice in one case of a Fellow that his chief local paper dubs him F.R.H.S. under all circumstances. May that be regarded as O.K., or, as translated by Justice Ridley, “all correct?” I feel an interest in knowing, and my interest—originally whetted by a recent pronouncement with respect to the use of V.M.H.—is doubly so by the publication in your columns of these wondrous scientific fellowships and the absence of the horticultural ones. Is it no honour to be identified with horticulture, and is the old art on the down grade after all?—A FELLOW.

[This “Fellow” may compose himself. Horticulture is in the ascendant, and for the first time in history is used as a flag, in the form of large posters, under which distinguished botanists and scientists, who are not horticulturists, are sailing on their lecturing voyages. This admission of the attractive power and influence of horticulture is significant, and our friend ought to rejoice in the compliment thus paid to the ancient art to which he is devoted.]

THE YOUNG GARDENERS' DOMAIN.

GLADIOLUS THE BRIDE.

THESE, like so many other bulbous plants, are easy to grow, and desirable in every respect; and where cut flowers are in demand they should be found in quantity, as they well repay the care and attention that must be afforded them. The most essential point to insure success is to have well-ripened corms, for if they are not properly matured they will flower indifferently, and not give satisfaction.

The best mode of culture, which if given a fair trial will commend itself to all, is the following:—Enough corms should be procured to make two successions of a size according to the requirements of the grower. The earliest ought to be potted in the autumn, and grown to produce flowers during the following spring and summer; 5 and 6-inch pots, clean and properly drained, are most suitable. If the roots are the size of a shilling, six for the former and nine for the latter will be ample. Pot firmly an inch below the surface in a mixture of two parts sandy loam, one part peat, and one part leaf mould and sand. Plunge the pots to the rim in ashes, and water sparingly until they push through the soil. Keep them growing in a cool temperature until about February, when a few pots may be introduced into an intermediate house at intervals to make them last over a longer period. As soon as they have done blooming and show signs of ripening harden them, and place the pots out of doors on their sides, gradually withholding water as the leaves ripen. Care should be taken to protect them from heavy rains afterwards, or the bulbs will decay. When ripened they should be shaken out and laid thinly on a dry sunny shelf for a time, eventually storing them in a cool place, free from frost, until the following March, when they can be planted as advised below.

The succession should be planted in March, in rows 6 inches asunder and 3 deep, on a south or west border, with a deep well-worked soil. They are greatly benefited by frequent hoeing and a mulch of short manure. They can be lifted in September, tied together in bunches, and hung in airy houses to become well ripened, and afterwards potted as advised for the earliest corms. It will be seen by the above methods they are grown in pots and in the open ground alternate years, and being sound and well matured will consequently flower much better than if grown in pots, as is often the case, every year. It will also be noted that flowers can be cut from those in the open ground, and used for the various purposes for which these lovely spikes are invaluable.—NIL DESPERANDUM.

SCHIZANTHUS.

WHERE cut flowers are in constant demand a gardener has to exercise judgment as to those kinds that are best and most useful for that purpose. Some of our choicest flowers would prove an utter failure (though they last well on the plant) if they were used for vase work. *Schizanthuses* are admirably adapted for cutting, and are not difficult to grow if not allowed to become drawn while in the seed pan.

A good time to sow the seed is about the last week in August when the plants are wanted in flower in the following spring. It should be sown thinly in well-drained pans, using a moderately light soil. On a shelf near the roof of a greenhouse is a good place to stand the pans till the seed have germinated. A sheet of paper may be laid over them for shade. As soon as the young plants appear the paper should be removed, so that they may have all the light possible.

When the seedlings are large enough to handle pricking them off becomes necessary. It is a good plan to transfer them to boxes for a short time, after which they may be potted in small 60's, using a little heavier soil, and keeping them in a cool temperature. About the end of January they must be shifted into the flowering pots, care being taken in giving them good drainage. As a rule 24-size pots are used, placing four plants in each. If 32-size are used two plants in each are sufficient.

When the plants begin to make rapid growth, as they generally do, they should be given a stake, or they soon fall over, and the growths become cramped. *Schizanthus* never require more than an ordinary greenhouse temperature, and I think if this were more generally recognised they would be much more largely grown. If the foregoing cultural notes prove a benefit to any of my young fellow craftsmen I shall be gratified.—ASPIRANT.



HARDY FRUIT GARDEN.

Pruning and Training Apricots.—During open weather in the course of the next few weeks the necessary attention must be given to the requirements of Apricots on walls. The pruning out of old useless branches or growths is the first essential, next the reduction of the young shoots, so as to leave no more than may be accommodated on the wall without crowding. Those shoots not wanted may on the lower side be cut out entirely, on the upper shortened back to form artificial spurs.

There will also be found a number of natural spurs, all of which must be preserved, for, providing there are sufficient of these, artificially formed spurs are not required. Fruit is borne on both these kind of spurs, as well as on young shoots, and the object of pruning should be to so regulate these bearing parts that the wall may be effectually, but not thickly, covered. Young shoots, before being nailed in finally, ought to be pruned to a wood bud singly placed, or to one situated between two blossom buds, termed a triple bud.

All the branches must be displaced from the wall and re-arranged, especially if worn out parts have to be removed, thus causing large vacant spaces. Young vigorous shoots from near the base ought to be selected for filling up the spaces, but if not practicable secure those in the most convenient positions. Strong but not sappy wood is the best to utilise.

Peaches and Nectarines.—These differ little from Apricots in the matter of pruning, training, and general management. There is a difference, but it lies chiefly in the freer utilisation of the young ripened wood of the previous year, relying less on either natural or artificial spurs.

If summer and autumn pruning were judiciously carried out at the proper time, there will not be much superfluous wood to be removed now. Weakly or worn-out branches it is requisite to dispense with, and this may occasion the complete readjustment of the branches. In all cases it is necessary to clear out the old bearing wood of last season, and if this were not cut out in autumn it must be done now. The best shoots for retaining are those laid in below the bearing shoots of the previous season. They require to be well ripened and situated on the upper parts of the secondary branches. If the points are unripe or there is not room for full length shoots, cut back to firm ripe parts, but to a position where triple buds are situated, or at least to a single wood bud. This is an important point in the pruning of Peaches, Nectarines, and Apricots, because if a shoot capable of bearing fruit is pruned to blossom buds no wood growth can extend beyond the fruit, hence no flow of sap is maintained to support the fruit, which consequently dies.

In nailing in the wood, first secure the principal branches, disposing them regularly over the space at command, next the secondary branches, and lastly, the young bearing shoots, laying them in evenly at a distance of 6 inches apart. Avoid making shreds too tight, and placing nails so that they are liable to injure swelling shoots.

Though it is desirable to have the training completed before the trees commence blossoming, yet it is advisable to delay the final nailing as long as possible, in order that the expansion of the flowers may be retarded, especially if mild weather prevails.

Cleansing Walls and Trees.—After the training has been completed, should the flowers not be too advanced towards opening, trees that have not been seriously affected with red spider or scale during the previous year, may be effectively cleansed by a thorough syringing with a solution of softsoap, 2 ozs. to the gallon of water, with the addition of a handful of sulphur mixed in. The sulphur will combine better with the solution if mixed into a paste first with a little water. The walls will be cleansed as well as the trees, but if the mortar has fallen away from between the bricks, fill the spaces up before re-arranging the trees. Where there is any possibility of red spider hibernating on the stems, branches, or shoots, the trees should be painted over with a mixture of Gishurst compound, 6 ozs. to the gallon of water to which has been added soot, clay, or loam, making the mixture of the consistency of paint. Apply this dressing with a painter's brush, laying it on the young shoots very carefully from their base to extremities, so as not to dislocate the buds.

Young Wall Trees.—Trees newly planted in autumn, and only loosely secured for allowing the trees to settle with the soil, may now have the pruning needed, cutting back to suitable buds, the shoots regularly disposed and nailed in. Providing there are a sufficient number of well ripened shoots to form a good foundation of branches, unripe ends only may be pruned away close to wood buds. If there are not the proper number of shoots for forming the main branches, prune lower. Additional shoots will thus be originated of the required strength, selecting the best when extending to form the branches. Bold wood buds pointing in the desired direction are usually selected for pruning to.

FRUIT FORCING.

Pines.—The plants recently started into fruit will, if in good condition at the roots, produce strong suckers. When these are large enough to handle, all, except one to each plant, should have the growths checked by

taking out the centres of those not wanted. As a supplementary batch to the autumn-potted plants, select others which have been wintered in 7 or 8-inch pots, choosing the most vigorous plants. The remainder of such plants ought to be reserved until the general spring potting, when they should be shaken out and treated like suckers. Provide fibrous loam with the herbage reduced, or if used fresh it should be placed where it will be heated, so as to kill the grass and any contained larvæ, and when torn up add about a pint of superphosphate and a similar quantity of soot to each bushel of compost. If the turf has been laid up it must be had under cover some little time before using to become dried. Drain the pots moderately, but efficiently, dusting with wood ashes or soot to exclude worms, and keeping the plants well down in the pots, ram the soil firmly round the roots, leaving sufficient space for copious supplies of water being given when required. For Queens, 10-inch pots, and 11 or 12 inches are suitable for varieties of more robust growth. A temperature of 60° to 65° will be sufficient for these plants, also for those potted last autumn, and 80° to 85° at the roots.

Plants in beds about to be started into fruit must not have the heat at the base of the pots over 90° or 95°, or their roots will be injured. If sufficient fruit be started to meet the requirements, later successional plants may be advanced slowly, they, with autumn-potted suckers, requiring careful watering, especially where the heat is supplied by fermenting materials.

Strawberries in Pots.—The weather, though mild, has been foggy and unfavourable for more than keeping the plants gently moving. Ventilation must be very carefully given to plants in flower, setting or swelling the fruit, as sudden and drying currents of cold air start both the organs of fructification and the tender fruits, and they do little good afterwards. When the air is cold and sharp some hexagon netting placed over the ventilators admits of fresh air when it could not otherwise be admitted. Plants in flower should have air under or above them, so that it is warmed before it comes in contact with the tender fructifying organs. Have the atmosphere rather dry for a couple of hours each day, so as to insure conditions favourable for fertilising by a little extra heat if necessary, with freer ventilation. Fertilisation is easily effected with a feather duster, examining the flowers each day until there is a good crop set, after which remove all superfluous flowers, also surplus and deformed fruits. Water the plants in flower on the mornings of fine days, lifting the leaves and flowers with one hand so as to avoid wetting them, and keeping the water from the crown, as that frequently suffers through the frequent application of water and a close atmosphere. Afford liquid manure to plants swelling their crops, and maintain a genial condition of the atmosphere with a temperature of 60° to 65°, with 10° to 15° rise from sun heat.

Vines.—*Earliest Forced in Pots.*—These will now require copious supplies of liquid manure, always tepid and never too strong. The nourishment is required as soon as the Vines have made fresh growths, and then right along to secure well developed bunches and berries. When these are set, thin somewhat freely to induce fine berries, but not going to the extreme of making the bunches loose; compact, even-berried clusters are the most tempting. Maintain the night temperature at 60° to 65°, falling 5° on cold nights, 65° to 70° on cold days, 70° to 75° when mild and dull, and on fine days ventilating at 70°, but only a little, increasing the air with the sun heat to 80° or 85°, at which keep through the day from that source, closing in good time and so as to run up to 90°, then damping the paths and walls. Damping is also necessary in the early part of the day, and in the evening of fine days.

Early Forced Planted-out Vines.—Attend to tying the shoots and stopping them one or two joints beyond the show of fruit where space is limited, the axillary growths or laterals below the bunch being removed, except those on the two lowest joints, which, with those above the fruit, should be stopped at the first leaf and subsequently as made. The stopping is very important, for allowing more growth to be made than there is room for, and not considering that a little lateral extension is desirable, causes overcrowding, and that is fatal to good results. The cultivator must be guided by circumstances, and manipulate so that the principal foliage be fully exposed to light. Very close stopping is not advisable where there is room for extension, the increased foliage promoting corresponding root action, and the elaborating power is enlarged; therefore, make provision for an increase of growth, and retain all the foliage consistent with its full exposure to light and air. Maintain a temperature of 65° at night, and 5° more for Muscats where the Grapes are in flower.

Buckland Sweetwater, and others that do not set the berries freely, should be brushed over with a large camel's-hair brush or brush of feathers. This is essential for Muscats, assisting fertilisation by shaking the rods daily, or dusting the bunches (after brushing them) with pollen taken from varieties that afford it freely, and this, applied to the stigmas, usually results in a good set, especially if accompanied by a circulation of rather dry, warm air. Commence thinning when the berries are about the size of small peas, it then being seen which berries are fertilised by their taking the lead in swelling. Ventilate carefully, a little at a time, so as not to reduce the temperature, only to prevent its rising too suddenly and too high. Maintain a genial condition of the atmosphere after the Grapes are set by damping the paths and borders in the morning and at closing time. Water inside borders as required with tepid liquid manure not less in temperature than the house.

Vines Started at the New Year.—The buds are moving both evenly and strongly. Continue syringing the Vines twice a day until the bunches form, then discontinue it; maintain the atmosphere afterwards in a genial condition by damping instead two or three times a day. Avoid syringing hot-water pipes when highly heated, the vapour being different from the

moisture given out by cooler surfaces, and is a common cause of rust. The temperature should be increased to 55° at night, and 60° to 65° by day, with an advance to 75° from sun heat, gradually raising the heat to 60° to 65° at night, and 70° to 75° by day by the time the Vines are in leaf. Ventilate carefully, early, and in accordance with external influences.

Houses to Afford Ripe Grapes in July.—The Vines must be started early in next month. There is no need to cover the outside border with more than a light mulching of lumpy material to prevent snow or frost chilling the roots. If the Vines are planted outside protect the stems with hay-bands. Syringe the Vines two or three times a day, maintaining a night temperature of 50°, and 55° by day, with 65° from sun heat. Supply inside borders with water or liquid manure in the case of weakly Vines, always equal to the mean of the house in temperature, and never making the soil sodden, yet bringing it into an evenly moist condition.

Late Houses.—Gros Colman, Gros Guillaume, Mrs. Pince, Trebbiano, and other Grapes requiring a long time to grow and perfect their crops should be started about the middle of next month; therefore have the houses put in order, and everything essential in respect of cleanliness to the Vines doing well effected without delay.

THE BEE-KEEPER.

BRITISH versus FOREIGN HONEY.

It will be interesting to bee-keepers to know the value of honey imported into this country during the past year. According to a return furnished by the Statistical Office H.M. Customs, honey to the value of £22,061 was imported. In 1896 the value was £29,296, and in 1895 honey valued at £41,302 was imported. It is not possible to obtain the correct weight of honey, the value of which works out to the above figures. It will, however, be considerable, as the price quoted in the first instance would be low.

An object lesson to bee-keepers in this country, which they should not lose sight of, is the gradual decrease in the imported article. It would be much more satisfactory if the weight of honey were known, as the value may have been less per ton during the past year than in previous years. But this can hardly account for the difference of £19,241 in two years.

As the decrease has been gradual, and there has been no particular reason to account for the falling off, we can only come to one conclusion, which is that bee-keepers throughout the country are producing honey of superior quality, and in much greater quantity than formerly. This is encouraging to those bee-keepers in this country who have steadily worked on simple, but safe lines, and encouraged others on the same course in the use of the modern moveable frame hive. The above figures will doubtless come as a surprise to many people, as neither of the past three years has been really good for honey production. There have been a few isolated cases in which large yields have been chronicled, but they have been in the minority when compared with those who had a fair or indifferent harvest.

Although in some districts there has been a general falling off in the number of bee-keepers, many of whom kept their bees in straw skeps, and lost them through disease and carelessness, their places have been more than filled by those who have managed their bees on rational lines in the moveable frame hive. The result is shown above, and should act as an impetus to try and further reduce the importation of honey into this country in the future.

HAVE PRICES ADVANCED?

It is sometimes remarked, "figures may be made to prove anything;" and this is partly true, as they are sometimes misleading, still one cannot ignore the fact that there are now many tons of honey obtained in this country from districts where a few years ago it was all wasted, as there were no bees kept to collect the nectar from the flowers; or what bees there were had made their homes in the roof of some old building or in the trunk of a hollow tree, whilst here and there, often two or three miles apart, were to be found the homely straw skeps. Honey was not in demand, owing often, we fear, to the inferior samples and the rustic manner in which it was offered. Prices were high, and the foreigner was not slow to observe the opening for his product.

Honey in various degrees of purity, tastefully put up in glass jars, and neatly labelled, was to be found in all our provincial towns. The get-up being good, and prices low, a ready sale was usually effected, although the quality was often doubtful. The British bee-keeper now came in with honey of superior quality, which was tastefully put up in screw-top glass jars. Comb honey, too, of spotless purity was met with in all directions, the result being as shown above, the gradual ousting of the foreign product from our markets.

Prices, though, are lower than they were a few years ago, but there has been no perceptible difference in the price of either run or comb honey during the past seven years. The large dealers in our towns

practise the maxim of "small profits and quick returns," both comb and run honey being sold retail at the same price throughout the year. There is no prospect of prices being higher, neither are they likely to become much lower, except for inferior samples. The many inquiries for really good honey during the past few months gives one the impression that it is somewhat scarce, and that prices may harden.

SENDING COMB HONEY BY POST.

The parcels post is a great convenience to bee-keepers, as they are thus enabled to send small parcels to friends or customers much cheaper than would be possible by any other means. Great care, however, is necessary in packing comb honey, or it will not arrive at its destination in good condition. Not more than half a dozen 1 lb. sections should be placed in a box. If more is required they will travel much safer by rail.

If the sections are double glazed they will travel admirably if some soft paper is placed between the face of each section. Sufficient should be used to prevent concussion if the package has rough usage. A layer of hay, dry moss, or something of a similar nature, must be placed at the bottom of the box, which should be slightly larger than required for the sections. The intervening space at the top and sides must be well padded with the same material as placed at the bottom of the box. If the sections are not glazed, place a piece of cardboard slightly larger than the section against the face of the comb. The ends may lap over the sides and tied with a piece of string and packed as above. The whole should be packed firmly, so that there is no possibility of the sections moving. Fasten securely, and place a red label on the top of box marked "Fragile," and if the sections are placed in the box in the same position they occupied in the hive, they will travel a long distance without damage.—AN ENGLISH BEE-KEEPER.

TO CORRESPONDENTS

* * * All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **8. Rose Hill Road, Wandsworth, S.W.**, and **NOT** to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Packing Flowers (T. B.).—The box had either been sent off without any string round it, or it had been tied so insecurely as to escape. The lid had evidently been off, and the contents crushed in roughly among dry paper, the flowers separated from the stems, shrunk and curled into a ball. It is a matter of surprise that they reached us at all. We are trying to revive them, with the object of giving the name, if possible, next week.

Small Tomato Plants Withering (Cross).—The slight withering of the tips of the leaves in some of the plants may have been caused by sulphuring the adjacent houses, also the general yellowish colour of the foliage, but there are no disease or micro-organisms. The general weakness is due to thick sowing or drawing of the plants in the early stages. They are, as you say, weak at the roots. This you particularly ask about. The microscope revealed a few mycelial threads of some fungus, perhaps *Fusarium lycopersici*, but no "sleepy disease." The fungus may or may not have had something to do with the decay of the tap root, but there does not appear to be anything to be alarmed about, except the weakness of the plants; and as for the fungus, a little air-slaked best chalk lime sprinkled on the surface of the pots, just a light dusting, would be likely to subdue it, as the first watering would wash the lime down. The plants will no doubt improve as the days become longer. They cannot be too near the glass, affording air liberally, yet judiciously, on all favourable occasions, and not watering more than is needful to prevent flagging, as overwatering hinders root formation, which must be encouraged. We should raise the plants very differently, and expect them to thrive.

Certificated Radishes (S., Northampton).—The two Radishes to which you refer are "Deep Scarlet Olive-shaped Extra Early" and "White Olive-shaped Extra Early." We take the names from the "Journal of the Royal Horticultural Society," vol. xxi., part 1, August, 1897, where it is stated they were certificated unanimously at a meeting held on April 21st of the same year. It is also stated in the report that "these two Radishes were proved to be the earliest of all, and were ready for use in five weeks from the date of sowing." They were grown at Chiswick from seeds supplied by Messrs. Vilmorin & Co., Quai de la Mégisserie, Paris.

Peach Buds Falling (W. S.).—Your statement that "the trees were very dry at the end of autumn" is quite sufficient to account for the buds falling now. We have frequently used the same insecticide that you have, and never with any such untoward results, and we can only conceive it proving injurious when applied at an excessive strength or in a rough manner. Possibly, if you dig down deeply enough, you might find dry soil now; but be that as it may, dryness at the roots in the autumn is a fertile cause of Peach buds falling at this period of the year. We hope they are only falling to a limited extent, or equal to a thinning, and that sufficient will be retained for insuring a crop of fruit.

Violets in Lancashire (Aigburth).—Your mention of Widnes reminds of sulphurous fumes, and where these prevail Violets cannot possibly be grown so well as where the atmosphere is pure. They rank amongst the worst of all "town garden" plants, because so susceptible to injury by atmospheric impurities. Moreover, soils exert a great influence. We know of a district in Sussex, in view of the English Channel, and the air pure, where Primroses luxuriate; but not a Sweet Violet can be found in the banks for miles, and only here and there, at wide intervals, is the scentless "Dog Violet" seen. It is practically impossible to grow Sweet Violets in gardens in that district; and if they are not found wild in banks in any locality, while they flourish naturally in another, we should say it is impossible to make them succeed equally in gardens and frames in both districts. Violets sometimes, or often, fail in frames through not having been removed to them from the open ground soon enough. Given healthy plants prepared in gardens, it makes all the difference in results by those plants being planted in frames during the first week in September and the last week in October. We should not expect Violets to thrive within the smoke radius of Widnes half so well as in certain districts of "Essex and Kent."

Books for R.H.S. Examinations (T. B.).—If you write to the Secretary of the Royal Horticultural Society, 117, Victoria Street, Westminster, on the subject, he will send you a list of books recommended; but we have to say that large and expensive books have not been found the best by candidates who have told us that they deeply regretted they had expended hardly earned money on them. One of these candidates, who headed the list a few years ago, told us that he had thrown £3 away on "big books," and he found the compressed information in the cheaper primers and manuals of far greater use to him than the large volumes through which he had to "wade" for hours and sift the chaff from the grain as he went along. As to the "subjects dealt with," no one knows what they will be until the envelope containing them is opened in the examination room. Several of the questions may be of a strictly scientific nature, some of them mere puzzles, others practical and useful; but each candidate can select the number that must be answered from the list. On these he must concentrate attention and do the best he can with them within the time allowed, ignoring the others. You must understand it is not those who possess the most really useful practical horticultural knowledge who win the most marks in these examinations in "horticulture," but rather those who have a smattering of knowledge on many things, and who are apt in making the most of what little they have in the time at disposal by expertness in the use of the pen. You have heard of the "pen being mightier than the sword." It is more powerful than the spade in these "exams," and the most effective and profitable workers may find themselves far behind, in the number of marks, those who if placed in a garden for producing supplies of the best fruit, flowers, and vegetables at the times required would utterly fail. The questions asked are as much, if not more, botanical and scientific as practically horticultural. Some we have seen were not in our opinion worth the paper they were printed on, so far as they had bearing on the occupation of useful gardening; and we are as certain as we can be of anything that neither of the examiners who propounded the questions could, if confined separately in a room, answer the whole of them—practical and scientific—in a manner to entitle them to a place in the second-class list. Each could answer his own, of course. The point is that each candidate should not only do all he can to become well grounded in the scientific principles and practical routine of gardening, but must also cultivate the art of free and correct expression—a matter of considerable importance in the equipment of a gardener who expects to occupy and fill creditably a prominent position, such, for instance, as Mr. David Thomson occupied for nearly thirty years at Drumlanrig, and Mr. Owen Thomas fills so well in the Royal Gardens, Windsor. They might be able to grow the best of Cabbages and other things, but this would not suffice by a very long way, apart from other accomplishments that go to make a really high-class gardener. You may well remember that these exams. are not in the ordinary sense of the term competitive. Every candidate is accorded the marks to which he is entitled, and if he does not win so many as he hopes at the first attempt, he should try again. We see no reason why you should not put your abilities to the test, as you have nothing to lose and much to gain. Mark the questions, when you see them, that you feel you can best answer; apportion time to each of them, as if you answer, say, seven splendidly and forget the eighth, you may lose the medal, as happened not so very long ago.

Seedling Cypripedium (G. S.).—Your seedling is identical with *C. Lathamianum*, first raised by Mr. Latham, Curator of the Birmingham Botanic, and flowered by him in 1888. Similar results have been obtained by Messrs. J. Veitch & Sons from the same cross—namely, *C. Spicerianum* and *C. villosum*. Plants are now producing flowers in the Chelsea Nurseries of the firm just named exactly like the one you have sent, while others from the same cross show slight varietal differences. *C. Lathamianum* appears to grow and flower freely. The nearly white dorsal sepal, from *Spicerianum*, contrasts effectively with the other parts of the flowers, which are of a massive villosum-like character. The variety is worthy of extended cultivation.

Narcissus Tazetta Snowflake (T. A.).—The snow-white flowers, twelve on a scape, are charming in appearance, and both the bulbs and the treatment they have received must have been of the best. We perceive nothing unusual in the perfume for the variety. It differs from that of the Paper White in being heavier and, to our sense, less pleasant. We know of persons who cannot endure flowers of the last named in rooms, while others enjoy them. The perfume of the yellow cupped forms is totally different, some being distinctly sweet, and by many persons enjoyed, but not all. We do not think the odour of the flowers is materially affected by forcing; and, generally speaking, such as those you have sent could only be sparingly used in rooms.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*P. Taylor*).—1, *Adiantum macrophyllum*; 2, *Davallia Tyermani*; 3, *Cyrtomium falcatum*; 4, *Adiantum cardiochlena*; 5, *Davallia canariensis*; 6, *Adiantum formosum*. (*Grass*).—*Eragrostis elegans*.

COVENT GARDEN MARKET.—JAN. 26TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1 6	to 4 0	Grapes, lb....	1 6	to 2 0
Cobs ...	21 0	22 6	Lemons, case ...	11 0	14 0
Filberts, 100 lbs. ...	0 0	0 0	St. Michael's Pines, each	2 6	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz....	1 0	0 0	Parsley, doz. bnchs....	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle... ..	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzoner, bundle ...	1 6	0 0
Cucumbers... ..	0 4	0 8	Seakale, basket... ..	1 6	1 9
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 4
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 0
Mushrooms, lb....	0 6	0 8	Turnips, bunch... ..	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ferns, var., doz. ...	4 0	to 18 0
Aspidistra, doz. ...	18 0	36 0	Ferns, small, 100 ...	4 0	8 0
Aspidistra, specimen ...	5 0	10 6	Ficus elastica, each... ..	1 0	7 0
Azalea, per doz. ...	30 0	42 0	Foliage plants, var., each	1 0	5 0
Chrysanthemums, doz. ...	4 0	9 0	Hyacinths, doz. pots ...	8 0	12 0
Cineraria, per doz. ...	9 0	15 0	Lilium Harrisii, doz....	12 0	18 0
Cyclamen, per doz. ...	12 0	18 0	Lycopodiums, doz. ...	4 0	6 0
Dracæna, var., doz. ...	12 0	30 0	Marguerite Daisy, doz. ...	6 0	9 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica hyemalis, per doz. ...	9 0	15 0	Palms, in var., each... ..	1 0	15 0
„ gracilis, per doz. ...	6 0	9 0	„ specimens ...	21 0	63 0
„ various, per doz. ...	8 0	12 0	Pelargoniums, scarlet, doz.	4 0	6 0
Euonymus, var., doz. ...	6 0	18 0	Tulips, various, doz. bulbs	0 9	1 6
Evergreens, var., doz. ...	4 0	18 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2 0	to 4 0	Mimosa or Acacia, bunch		
Arum Lilies, 12 blooms ...	2 6	4 0	(French) ...	0 9	to 1 0
Asparagus, Fern, bunch... ..	1 0	2 6	Narciss, white (French)		
Azalea, dozen sprays ...	0 6	0 9	dozen bunches ...	2 6	5 0
Bouvardias, bunch ...	0 6	0 9	Orchids, var., doz. blooms	1 6	12 0
Carnations, 12 blooms ...	1 0	3 0	Pelargoniums, doz. bnchs.	6 0	9 0
Chrysanthemums, 12 bnchs. ...	4 0	15 0	Roses (indoor), doz....	0 6	1 0
Daffodils, doz. bunches ...	6 0	12 0	„ Tea, white, dozen ...	1 0	2 0
Eucharis, doz. ...	4 0	6 0	„ Yellow, doz. (Perles)	1 6	4 0
Gardenias, doz....	3 0	6 0	„ Safrano (English), doz.	1 0	2 0
Geranium, scarlet, dozen			„ „ (French) per doz.	0 9	1 6
bunches ...	6 0	9 0	„ „ per 100... ..	5 0	7 0
Hyacinths (Roman) dozen			„ „ Pink, dozen ...	1 0	2 6
bunches ...	6 0	9 0	Smilax, bunch ...	1 6	2 6
Lilac (French), bunch ...	3 0	4 0	Snowdrops, 12 bunches ...	0 9	1 6
Lilium longiflorum, 12 blms	4 0	6 0	Tuberose, 12 blooms ...	0 6	0 9
Lily of the Valley, 12 sprays	1 0	2 0	Tulips, dozen blooms ...	0 6	1 6
Maidenhair Fern, dozen			Violets, dozen bunches ...	1 6	2 0
bunches ...	4 0	8 0	„ Parme (French),		
Marguerites, doz. bunches	2 0	3 0	bunch ...	3 0	4 0
Mignonette, doz. bnchs. ...	2 0	4 0			

TRADE CATALOGUES RECEIVED.

H. Deverill, Banbury.—*Seeds and Plants for 1898.*Vilmorin, Andrieux, & Co., Quai de la Megisserie, Paris.—*Vegetable, Fruit, and Flower Seeds.*

OUR YOUNG SISTER.

ENGLAND, as a mother country, owns many daughters—in fact, it is perfectly true that the sun never sets on her dominions. Some of these daughters have lost their first youth, one daughter lost to us for ever through our own foolish management; forgetful of the fact that the part of N. America now styled the United States had got out of leading strings, we tried to impose upon her burdens and restrictions she would not bear—she rebelled, and we lost one of the fairest jewels of our crown. We learned a lesson then, never to be forgotten, and we have since tried to remember that children grow up, and must be allowed a little exercise of their own judgment. A harsh, unjust parent compels disobedience; then follows rupture, and the loss to both sides is great.

Among a small community there is often expressed an opinion that England's large family cripple her. Never was there so narrow-minded a mistake. An infant colony at first cannot walk alone, but let that colony be well nourished it soon outgrows childhood, and becomes at once both a strength and a glory. Her markets provide an outlet for our manufactured goods, and our markets are only too ready to receive her raw material. Then again, too, ours is a teeming population, and the difficulty of finding employment for that population grows.

There are so many young ardent fellows who (even if they could get it) would find the office stools in the close City most irksome—who pine for the freedom of an outdoor life, and who gladly embrace such a life in a far-off country where the mother tongue still sounds in their ears. The agricultural colonies of Australia have always had a charm for us, partly from the fact, perhaps, that South Australia owed its colonisation to a near relative of our own, who developed its agricultural resources to an immense extent, and to the great benefit of himself and his family. We are referring now to S. Australia, but would turn our attention to N.S. Wales, an adjacent territory.

Have our readers any idea of the size of this the oldest Australian colony? We fancy not. Now for some idea of its size. The British Isles contain 120,849 square miles; N.S. Wales contains 310,700, or very nearly three times as much. Of course, the population is very, very much less—1,182,500 as against 37,879,235.

The first farm was started at Paramatta in 1789; but the farming most in vogue in N.S. Wales is stock breeding. The country was eminently favourable to this branch of industry, probably because stock are more easily transported to places of sale and consumption than any other commodity. The wool trade has always been a great standfast of these colonists; indeed, we should almost suppose that the wool industry has reached its zenith. Fifty-seven million sheep make a very respectable flock, and the annual value of their wool is something like 9 millions sterling.

It may interest some readers to know how very quickly wool degenerates in Australia—we mean the quality—and it is of the utmost necessity that fresh blood be constantly imported from our best English flocks. We have seen specimens of Australian native wool, then the wool after one cross, and so on till the fleece became a staple of great beauty and weight. Some of these fleeces have been exhibited both in Paris and at our Colonial and other exhibitions.

We find all these sheep have rather tended to diminish the cattle-raising; but as it is, we find there are about 2½ million head of horned stock. Here, again, we find the necessity there is of fresh blood from

home, and expensive as importation may be it pays. Herefords and Shorthorns do well in this country, which has really a climate not unlike our own. We remember long ago hearing much about the cost of freight, and how, in the case of cows, this cost was reduced to a minimum by sending over cows in calf, which were able to supply the ship's company with a fair supply of fresh milk *en route*.

The arable land of N.S. Wales is 1,325,964 acres, and the produce is about £2 11s. 3d. per acre. Now we think this is ridiculously small. Surely there is need of reformation here, or of new and approved methods. Poor worn out old England can do better than this, and here in N.S. Wales we have virgin soil. Wheat occupies 647,483 acres, and the crops must be very light, as the value of the Wheat harvested is only £2 5s. per acre. Much of it is grown for hay, a thing we never heard of before, and in this form the value per acre is about £3 10s. Poor as is this yield, it is equal to that of United States of America and Russia.

When a country has still some thousands of acres suitable for Wheat growing, and has to import 2,000,000 bushels for home consumption, there is need of reform somewhere. Maize, too, might be grown with success. As green food it is most valuable for cattle. And there are, too, cooler regions suitable for Oat cultivation. In the eastern districts we find what we should call here good butter grass, and the people have already established over 400 creameries; 26,000 hands are employed, and the output is about 30,000,000 lbs. Mr. Williams, from whose able paper we take these facts and figures, thinks the N.S. Wales farmer does not understand the proper winter management of dairy cows. Possibly cake is bad to come at, and dear into the bargain, and there may not be a good Mangold pie at command. He also finds more moisture in the butter than is desirable (whether water or buttermilk he does not observe). This might be easily remedied by the importation of a few of our young dairymaids armed with the latest butter workers from Museum Street, London.

We generally associate milk and bacon, but the bacon must be of first-rate quality, and possibly co-operation must be tried to bring any scheme of bacon rearing and curing to perfection.

Forestry hardly comes under the head of agriculture proper, and yet just a word may be said here as to the excellence and variety of timber grown in this colony. Mahogany is one of the native growths, and there are many others of great commercial value. Australia has a great future before her, and her value as a food producer for the world is immense. As science advances we shall receive of her superabundance, beef and mutton in more desirable forms than the tinned consignments of to-day, and her butter and cheese carefully manipulated may oust the Danish and American products out of the market.

We should fancy one great difficulty in Australia is the labour question and the distance from ports of embarkation; these are two evils that may be remedied.

WORK ON THE HOME FARM.

Mildness is still the chief characteristic of the present winter season. If the evening is frosty the morning is mild, and we are coming to the conclusion that there is little fear of severe frost this time. They must be keeping all the cold at Klondyke.

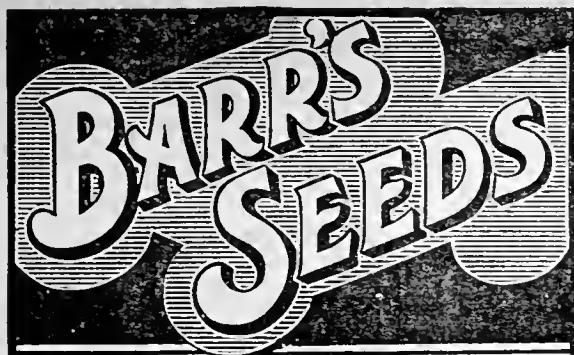
We are thankful to say we can do without it, but our strong land neighbours will hardly say the same, for without frost their spring corn sowing must be an expensive process, and far less satisfactory in finish.

Though mild, the weather lately has been dry, and we are only waiting for a dry windy day to attempt Wheat rolling. Rolling Wheat in January seems out of season, but handsome is as handsome does; and if the roller will work properly, the Wheat will no doubt be better for a little consolidation about the roots.

There is another thing: our light land is very subject to a weed called by various names, but most generally known as the common Poppy. This weed is never so easy to destroy as when it is very small, and we have already observed it amongst the Wheat in considerable numbers. It is now in its first leaf, and if it is to be effectually dealt with, the Wheat must be harrowed within three weeks; but there is a *sine qua non*—the Wheat must be rolled first, or the harrows will pull it up in large quantities.

A good thing for sand land Wheat, and very injurious to the Poppies, is common salt; but to deal with the weeds most effectually, the salt should be applied a week or two before the harrowing. If 5 cwt. of salt per acre be well and evenly sown, at the end of a fortnight a thin crust of caked soil will be formed on the surface. If the land be harrowed whilst in this condition almost every Poppy will be killed, its tender rootlets being snapped by the disturbance of the caked surface. The effect is practically the same as that of severe frost on a water-logged surface.

Wheats are looking fairly, but not so well as last year, and they are not so clear of twitch, for was not 1894 a rather wet season?



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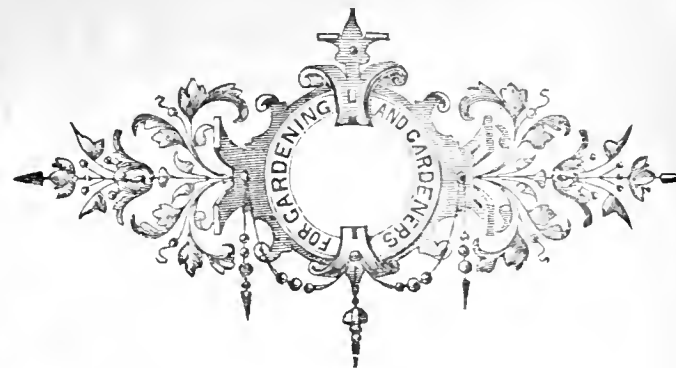
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THURSDAY, FEBRUARY 3, 1898.

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THE BLACK CURRANT.

ONE of the most useful of our "bush fruits" at the present time is the Black Currant, and though it cannot be compared with its relative the Gooseberry in one respect—namely, the length of the season during which its fruit is obtainable and saleable, yet it is extremely productive, and has hitherto been regarded as more reliable, owing to its hardiness and comparative immunity from disease or insect attacks. Whether the fruit is grown for home use or sale, it is, however, an important fruit, and a brief review of its history and culture may not be unacceptable.

Ribes nigrum is found wild in some parts of England and Scotland, occasionally, perhaps, being merely an escape from cultivated grounds, but in many cases, particularly in the northern parts of this island, it is probably a true native. Beyond Britain it is very widely distributed throughout the northern parts of Europe, extending into Siberia and the Western Himalayas; but though it is said to be found wild in North France and Italy, it does not appear to have been known to, or at least cultivated by, the Romans. Alphonse de Candolle, in referring to the antiquity of the plant, says, "From the variety of names" (M. de Candolle collected over forty names) "in all the languages, even in those anterior to the Aryans, of the North of Europe, it is clear that this fruit was very early sought after, and its cultivation was probably begun before the Middle Ages." In England it was cultivated at the end of the sixteenth century, as it is mentioned by Parkinson and other writers from that time onwards; but it does not appear to have been such a general favourite as either the Red Currant or the Gooseberry, as it is chiefly recommended for its medicinal qualities, and Leonard Meager (1699) says it is grown principally for its "physical" uses.

Forsyth (1806) implies that the Black Currant was somewhat of a favourite in Ireland, and mentions that the fruits are steeped in whisky, of which they make punch, and recommended it "as a good medicine for coughs and colds." He advises that the Currants be bruised and put in a jar, the

No. 2575.—VOL. XCVIII., OLD SERIES.

whisky being poured over them and allowed to stand for a week or a fortnight closely covered, then to be strained and put in bottles. It may be pardonable to refer to this, but I once had an opportunity in Ireland to try some "medicine" of the kind described, and it was undoubtedly both palatable and cheering, but whether that was due to the good quality of the whisky or to the Black Currants I have not yet determined.

It is a remarkable fact that the Black Currant should have been so long cultivated without producing any varieties, for in 1824 Loudon placed it on record that, "There are no varieties of the Black Currant." The author named in the previous paragraph (Forsyth) mentions, it is true, we have "the common Black and American Black Currants," but I have failed to obtain any explanation of this, unless the term "American" refers to some species, such as *Ribes floridum*, which bears black fruits. In "Loudon's Magazine" for 1828 a correspondent refers to a white-fruited variety of Black Currant which had been found in a cottager's garden near Bath a year or two before, but beyond that I have failed to find any record of an established variety until some years later.

The first edition of the late Dr. Hogg's "Fruit Manual" was issued, I believe, about 1845, and in it three varieties are named—the Old Black, Ogden's Black, and Black Naples, the author saying the second variety "is very fine and large, the berries measuring sometimes half an inch in diameter; the clusters are also much larger than in any other variety of Black Currant." This would appear to indicate that the author was acquainted with some not included in his list. Fifteen years subsequently (1860), when the second edition of the "Fruit Manual" was published, the same varieties are again the only ones named; but there are some corrections due to further experience, as it is there said of the Common Black, "This is much inferior to Black Naples and Ogden's Black, and not worth cultivation." Of Ogden's Black it is said, "This is not so large as Black Naples, but considerably better in every respect than the Common Black; the bush is hardier than Black Naples;" while of the last named variety Dr. Hogg says, "The berries are larger than those of any other variety, frequently measuring about three-quarters of an inch in diameter; milder and sweeter than any other Black Currant, and the best of all the black varieties." Black Grape is given as a synonym of Ogden's, and New Black as a synonym of Black Naples.

I have not succeeded in ascertaining the origin of the last-named variety, but in an American work by Andrew Fuller, published in 1867, it is described in similar terms to those in the "Fruit Manual," with the synonym "Cassis Royal of Naples." The word Cassis is applied to the Black Currant by the French, and has been used by most of the old writers, though an older name is Poivrier, and Groseiller Noir is also given by C. Bailey in his "Manuel du Jardinier," in 1829, with Cassis. Whether the variety Black Naples reached America from France I have not been able to ascertain, but it is the only clue research has afforded me. Perhaps some readers can throw a light on the origin of this Black Currant, as it is still one of the best in cultivation.

The eighth edition of the "Fruit Manual," issued in 1884, contains descriptions of two other varieties in addition to those in the preceding issues. Taking them in chronological order Lee's Prolific Black was raised, Dr. Hogg tells us, by Mr. George Lee, market gardener of Clevedon, in Somerset, and it received a first-class certificate from the Royal Horticultural Society in 1869. Further, after stating that the berries were "as large, or larger, than those of Black Naples," the author says, "This is by far the best of all the Black Currants." With regard to this I have in my memory examples of Lee's Prolific grown fifteen years ago, which exactly corresponded with the description in the "Fruit Manual," but the variety I have had or seen under this name within the past six years is much inferior to Black Naples; it does not grow freely, bears scanty crops, and the individual berries are small. In short, it seems to me that in some cases the common old Black has been distributed under this name. In the form I have obtained it Lee's Prolific is not worth growing, and Ogden's is little better.

The second variety alluded to is Black Champion, and I well remember when this was first shown by Mr. Dunnett at the meeting of the Royal Horticultural Society on August 9th, 1881, when the Fruit Committee awarded a first-class certificate for it. I measured berries that were over three-quarters of an inch in diameter, and the fruits shown were probably the finest examples of Black Currant ever exhibited. Shortly afterwards I had the opportunity of seeing the original plants growing in Mr. Dunnett's garden in Essex, and for vigour of habit, free bearing, and distinct rich flavour of the berries, the variety was all that could be wished. As seen then and several times subsequently, I should have had no hesitation in placing this variety before all Black Currants known to me; but unfortunately subsequent experience has been similar to that with Lee's Prolific, for though large berries are obtained from the variety I have grown under that name, they are not sufficiently abundant, nor is the plant of the free habit it should be to commend it to a grower who has to sell the produce. Whether this is due to deterioration or to inferior varieties being substituted for it I am not prepared to say, but in my experience I have seen special conditions or cultural methods result in great variations in the size of Black Currant fruit, nearly as much as there is between varieties. Some nurserymen regard Black Champion as identical with Baldwin's, but my plants of the former will not compare with this in growth or productiveness, though I know several market growers who have Baldwin's under the two names.

One variety which has come into cultivation since the last edition of the "Fruit Manual" is Baldwin's Black, already referred to, and which is said to have been raised in Kent, but as to the precise time of its introduction I have no certain information. It is, however, a useful variety, strong in habit, very prolific, somewhat earlier than Black Naples and with larger average fruit, and together they constitute all that any grower can require in Black Currants.—FRUIT GROWER.

P.S.—Since writing the above notes with regard to the Black Naples Currant I have referred to the "Hortus Duroverni," a catalogue issued by W. Masters, nurseryman, of Canterbury, in 1831, in which a list of Currants is given, and amongst them is the "Black" and "Naples Black," so that the variety would appear to have been in cultivation at least fifteen years before the first edition of the "Fruit Manual" was published.—F. G.

(To be continued.)

AMONG THE HARDY FLOWERS.

THE harvest of the gardener comes not in autumn alone. At all seasons he may reap some reward for his toil and care. Even the grower of hardy flowers alone may seldom be without the recompense given by the plants he cherishes. At times the harvest is scant, but it is his own fault if he is long without some flower to yield him delight. The dying time of the old year and the first days of the new are, perhaps, his fasting time, unless hard frost prevail when the longer days are well on the way. So now, in this mild season, the garden's dwellers begin to give more than a gleaner's share to him who loves them. Even with weather saddening to the optimist, and more than confirming the grumbling of the pessimist, the flowers have come on apace. They have sprung into birth as rose the Highland host on the hillside at the signal of Roderick Dhu. From mound of grey pink or green and Mossy Saxifrage Snowdrops and Crocus have emerged. The grass of the lawn, the meadow, and woodland are sprinkled or made white with the pendent blooms, or are gay with the coloured spires or cups of the Crocus. The Winter Aconite is more plentiful now than when last we wrote, and its cheerful little flowers have companionship in their yellow colouring now.

The glaucous grey-leaved Barbary Ragwort (*Othonnopsis cheirifolia*) has a few of its yellow flowers nearly open, looking pretty, as if set in a grey-coloured fluted cup. Yellow Crocuses are fairly plentiful now, for *C. gargaricus*, *C. aureus*, *C. ancyrensis*, and *C. vitellinus* are all in bloom. Some of the pot Marigolds have not been vanquished by the winter's days, and with a *Doronicum* or two keep up the colour's claims. Snowdrops are plentiful, and the eye is delighted with their charms of purity and form. Their beauty is not challenged, but their place in our hearts is not uncontested, for the Snowflake has come to draw us to admire its beauty and its grace. The varieties of *Erica carnea* have not yet reached the zenith of their beauty, but

before long *Erica mediterranea* will be in bloom as a rival in our affections. The pink *Hepaticas* are beginning to flower, too, and with the crimson blossoms of *Cyclamen Coum* give us some brighter hues than we get among the *Crocuses* or the *Snowdrops*. Yet even without these there are bright colours given by the *Primroses* and the *Polyanthuses*, which all winter, so far as it has gone, have never ceased to bloom.

Now, too, is there more variety among the *Crocuses*. Here and there among the clumps of the Dutch varieties some precocious or presuming flower has lifted its head above its neighbours and is ready to open. *Crocus Imperati*, too, which quickly responds to the glances of the sun, has been only awaiting a favourable time to open its purple flowers to lure the bees to enter their cups. To-day the welcome sunshine has come. No prettier *Crocus* have we in January than this, and many would be wise were they to purchase it at the proper season—early autumn—and to plant in generous clumps. It is comparatively a cheap *Crocus*, and thus within the reach of nearly all who love a garden. It seeds freely in my garden, and seedlings are becoming numerous. These give some interest when they flower for the first time, giving always the hope of something distinct from, or better than, the old. This *Crocus* varies more than many are aware of in size of flower and depth of colouring, as well as in time of coming into bloom. The variation in the outer colouring is also considerable, some being entirely free from markings on the fawn-coloured exterior of the segments.

Pretty also, and early flowering, are the varieties of *Crocus chrysanthus*. Two of those I have were kindly sent me from Trinity College Gardens in Dublin. As they open early in the year and, though small, are bright withal, they are admired for their merits alone; the pleasure increased, too, by the thought of whence and from whom they came. These varieties are *C. c. fusco-tinctus* and *C. c. fusco-lineatus*. The former is, as the name indicates, tinted or, perhaps better, "clouded" with brown on a yellow ground on the outside of the exterior segments. The latter is similar, but lined with brown instead of being clouded. For the first time with me another variety, named *C. chrysanthus albidus*, has come into bloom. Like the foregoing, it is small in size, but its colouring is quite different. It is a creamy white outside with a purple base, the interior being white with a yellow zone. It is a pretty little variety worthy of a place in the collection of choice hardy bulbous plants.

Near by is a good clump of the favourite little *Crocus Sieberi*. As this is written it has not yet opened for the season, but its closed flowers are gay with their bright purple points, and when the sun comes again will be very beautiful, covering the corner with a little mass of small, gay purple flowers. There are many other *Crocus* species and their varieties beginning to show colour, and soon there will be a number in bloom. Would that more knew their beauty! A garden which possesses them is a veritable "casquet of gems"—a casquet of precious things more pleasure-giving than any diamond or ruby could be.

The *Snowflake*, too, which, as we have said, has come to contest the place of the *Snowdrop*, merits more than a passing word, inasmuch as a sentence or two may lead to its being added to the favourites of some garden lover. It is not the ordinary *Leucojum vernum*, which comes into bloom later, but the one known to some bulb dealers as *L. carpathicum*. If Mr. Baker is right, it is a yellow spotted *Snowflake*, and I am content to accept his view, although it has been contested. However this may be, the principal use of the name to many will be by its means to be certain of securing the plant desired.

The yellow spotted *Snowflake* is very beautiful as well, but it comes later than the one now referred to. This has large flowers, pure white, with a dark but bright green spot on the exterior of each petal, and two or more blooms are produced on one stem. It appears to be *L. vernum* var. *Vagneri*, of Mr. Baker's handbook of the genus. The flowers of the Spring *Snowflake*, if less graceful and elegant than those of the *Snowdrop*, are very beautiful indeed. Of the *Snowdrops* one may say a word as well. They have come on very quickly, and now many varieties are in bloom. Among those in flower there is the very beautiful *Galanthus Imperati* var. *Atkinsi*, which should be sought after by those who wish to have one of the finest of the *Snowdrops*. Robust in growth, with large and beautifully formed flowers, it is one likely to please the most fastidious.

Among the earliest has also been Mr. James Allen's "Aurora," a flower of perfect form and purity of colour. *G. Elwesii* var. *unguiculatus* is also a comparatively early one, and some of the clumps are now well in flower. *G. flavescens*—the more robust and more deeply coloured of the "yellow" *Snowdrops*—is also in bloom, and is generally well observed, though the "yellow" is confined to the ovary and the markings, generally green in the flower. It is brighter and more pleasing than those who have not seen it may think.

If we look at the base of one of the rockeries we shall find the little azure *Hyacinth* known now as *H. ciliatus*, but more familiar to us as *H. azureus* or *Muscari azureum*. It is botanically a *Hyacinth*,

but to the gardener it is a *Muscari*, resembling the latter in its dense spike of flowers. It is a trifle delicate in some gardens, but suffers in my garden more than anything else from water lodging at the base of the flower stem during rains in January and from subsequent frost injuring the stem. Protection from slugs needs also to be attended to. It is a pretty little plant with its azure blue flowers and its fresh green leaves. There are one or two varieties of this, but none of these has as yet come into bloom.

Anemone blanda is open. It has been in bud for some time, but has at last ventured to spread its flowers to the wind. Had the sun not delayed so long we might have had it earlier; nay, even these *Poppy Windflowers*, which are now in bud, might have favoured us with a peep at their bright flowers. All around are *Daffodils* springing into life. Two days ago it seemed a moot question whether the quaint little *Narcissus minimus*, *N. pallidus præcox*, *N. Henry Irving*, or the *Saragossa Daffodil* would be the first to bloom.

To-day one can almost say with confidence that the tiny *minimus* will be the herald of the *Daffodil* host. Welcome will be its pigmy flowers; welcome in themselves, but thrice welcome as the forerunners of the train of beauties yet to come.—S. ARNOTT.

EARLY AND SUCCESSIONAL CAULIFLOWERS.

COMPACT heads of Cauliflower are largely in demand in nearly all private gardens throughout the summer and early autumn months. From the time they are in season till Broccoli are ready to succeed them it is never safe to let the supply run short; when, however, such a calamity does happen to occur the best course seems to be to prevent the autocrat of the kitchen from knowing the real state of affairs. A little innocent deception of this kind is often the means of helping "life's waters" to run smoothly on instead of being ruffled by stormy waves.

To be able to cut nice heads of Cauliflower during the last week in May or early in June a considerable amount of attention is necessary, and after the plants are set in their permanent positions, if they are left unprotected in severe weather, a serious check, if not total destruction, is the result; but as the crop is always a welcome one it is worth taking a few risks to secure. The old adage about the unwisdom of placing "all our eggs in one basket" is particularly applicable in this case. The safe plan to adopt is to have many successional batches. Now let us suppose we have a good stock of plants, raised from seed sown in August last, and kept in rough pits up to the present time, shutters or other means of protection having been given during the few frosty nights we have experienced during the autumn and winter. Such plants are this year wonderfully forward, as a steady growth has been made throughout the winter. The consequence is they require thinning out at a much earlier date than usual to prevent their receiving a check, which we all know must be avoided if good results are to follow.

In warm districts some of these should be planted out in sheltered positions as early as the second week in February if the soil is in the right condition and the weather favourable. They ought not, however, to be left entirely unprotected. If a few Spruce branches are stuck in the ground so as to shelter each plant on the north and east sides, and left there for a few weeks, the crop will often come through safely, and prove of great service. The plants left in the frames will then in the meantime benefit by the extra room, and early in March an additional quarter can be planted with them, still reserving a few for a third planting a few weeks later. When one has a stock of autumn-sown plants to depend upon, the beginning of February is quite soon enough to sow the small early varieties. The seeds come up quickly then, are sturdy, and grow steadily on as the sun gains power. I like to sow in gentle heat about that time, and as soon as the plants can be easily handled prick them out in boxes.

The advice, "don't sow thickly," is certainly somewhat hackneyed, but is just as necessary as ever it was, for millions of plants are annually ruined through the non-observance of this well known point.

When the young seedlings touch each other as they come through the soil the stems are always weakened and drawn before the plants can be transplanted. In February the majority of gardens are well supplied with pits and frames filled with fermenting materials; these are just the places in which to stand boxes containing newly pricked out Cauliflower plants. After a few weeks' sojourn in such positions they are ready for hardening off preparatory to being set in their permanent positions on a warm border. In severe weather, however, it is sometimes necessary to form rough pits with a few boards to keep the young plants in till warmer weather prevails. A couple of weeks after the sowing has been made in heat, if the weather is favourable, it is advisable to make another sowing in a warm border in the open air; plants resulting therefrom come on steadily in favourable seasons and form a good succession.

For these early sowings there are two varieties which stand out

clearly in advance of others—one is Veitch's Extra Early Forcing, which produces compact heads of snowy whiteness, the other Sutton's First Crop; the latter is a very compact grower, producing white heads and but few leaves. There is not much to choose between the two varieties just named in point of earliness. When these early varieties are sown a little seed of Magnum Bonum, Veitch's Pearl, and Walcheren, should also be put in, because, as they take longer to reach maturity, although sown at the same time, they supply the much-to-be-desired succession. About the second week in March, Autumn Giant or Daniel's King should be sown to supply heads for cutting in August, and by the first week in April another sowing of the same varieties may be made for containing the supply during the autumn. Eclipse is an excellent variety to sow for the same purpose.

When making sowings in the open air it is important to remember that the soil must be dry and in a well pulverised condition. There is not much difficulty in this respect when we are dealing with light soils, but in the case of heavy ones it is often a troublesome business. The small amount of space required for a seed bed, however, makes it quite easy to have a little burnt soil ready for placing in the drills to sow the seeds upon and cover with after sowing. Wood ashes are also of great value for the same purpose, and a supply should always be kept in a dry place ready for operations in spring. All young plants make rapid progress in materials of the above description, not only because they are in the right mechanical condition, but also because they supply food in a concentrated form and in a state suitable for the plants to take up at once. The surface of the seed bed should be levelled with the rake, but not patted with the back of a spade, unless the object of the cultivator is to have the soil cracking in all directions in dry weather, thus allowing the moisture to escape.

Few vegetables require so rich a soil to grow them to perfection as do Cauliflowers; the quarters set apart for them should be thoroughly manured and deeply dug. In planting, the practice of drawing drills about 3 inches in depth is a good one when the soil works well, but on heavy land it is often not practicable. The small early varieties, such as Sutton's First Crop, may be planted from a foot to 15 inches apart, while the stronger growers, such as Autumn Giant, should have a space of 2 feet allowed between the plants.—H. D.

INSIDE v. OUTSIDE VINE BORDERS.

THIS is a subject which in the "days of long ago" has often served as a text to bring into activity the rusty pens of sometimes ready writers, who for a time had laid aside the pen to ruminate upon the erratic behaviour of Vines under their charge. I have often been instructed, amused, and puzzled in turn with those wordy battles of the "scribes of old," who seemed to fight, like Englishmen, to the last, each being determined to vanquish the other.

When the smoke of battle had cleared away, and on-lookers attempted to find out which side had the advantage, they found themselves face to face with a well-nigh impossible task, and the practical result seems to have been the adoption of a compromise in the shape of borders made partly inside and partly out; the front walls of new vineries being built on arches to suit the requirements of that "divided style" of border making. I am well aware that in many instances innumerable grand Grapes have been produced on Vines growing in these "double borders," but I have always considered the principle must be wrong, and especially in the case of early forced Vines—as the temperature of the inside border is often considerably higher than that of the outside one, especially during the winter and early spring months. In our treatment of vegetation of all other descriptions we generally try, as far as possible, to maintain something approaching uniformity of temperature between the surroundings of roots and branches; why, then, should we well-nigh ignore the point in the case of Vines? Is it not one of those inconsistencies that "no fellow can understand?"

I quite expect that someone will be ready to advance a scientific reason for the apparent inconsistency, and I trust they will welcome the opportunity now afforded of illumining the path of us plodding workers with the piercing rays of scientific light. It may be a hard "nut to crack," but it will certainly repay the cracker. We want to know as far as possible the exact conditions under which the roots of Vines can perform their functions so as to produce the best results. It seems to me that a frequent mistake made in regard to Vine borders is to construct them all on the same principle without paying regard to various circumstances which should also be considered. I am no believer in the plan of making half the border inside and the other half outside for the same set of Vines, although I have had to deal with many constructed on that principle.

To my mind there are conditions under which a border entirely inside possesses the greatest number of advantages, while in other instances the outside one perfectly fulfils its requirements; but for the

half-and-half policy I can see no justification. I should never think of making other than an inside border for Vines intended for early forcing, because common sense, as well as experience, shows me that it is the simplest of all methods of keeping both roots and branches at an equal temperature, or nearly so, throughout the most trying season. A large amount of root run is not required, and both roots and branches are then under perfect control. My firm conviction is that half the apparently mysterious checks which early forced Vines seem to get in so many places are caused by the strange practice of having the borders outside the house.

When we come to consider the matter in regard to Vines grown for the production of late Grapes, we have a totally different combination of circumstances to consider. Such Vines are not usually started till March; the sun has by then gained considerable power, and as no great amount of fire heat is employed to start the Vines, outside borders answer well in regard to supplying favourable conditions for the roots during the growing season. The question of keeping the Grapes when they are ripe has, however, to be considered, and it is generally admitted that late Grapes hanging on Vines which have their roots in inside borders keep better than do those on Vines having their roots outside the vinery. This, however, is a matter which has, perhaps, not often been fairly tested, because, of course, heavy rains falling upon the border when the Grapes were ripe in the autumn, would naturally cause the berries to decay; but if wooden shutters were placed upon such borders in September, or early October, if the season were a fine one, I see no reason why the Grapes should not keep as well as those on Vines whose roots were rambling in inside borders.

In the event of very sharp frosts, it would, of course, be necessary to cover the border with other materials to keep frost from the roots. As the Vines would have entered upon what should be their natural season of rest, the lower the temperature of the border—as long as actual frost was kept out—the better for the Vines, and the more likely would the Grapes be to keep in a plump condition. I am quite of opinion that there is a good deal more to be said in favour of outside borders for late Grapes than many cultivators seem to imagine. Where vineries are built in blocks, on the market principle, of course outside borders are out of the question, and this may, perhaps, have had something to do with the almost universal rule of making borders inside for late Grapes in private gardens, where the same conditions do not apply.

I am distinctly in favour of outside borders for Vines grown to produce a crop at midseason, as the necessary warmth is supplied to the soil by the sun, and as the Grapes are not intended for keeping there is no danger of getting a well-made border too wet when a heavy rainfall is experienced. The advantages are that the soil is always kept sweet and aerated by the action of sun and air throughout the year, and this state of affairs is—as all cultivators know—conducive to a vigorous root-action. The cultural operations connected with the dressing and watering of such borders can also be carried out more easily than when the borders are inside. Another serious drawback to inside borders in private gardens is, that as it is generally necessary to grow large quantities of plants in vineries, the borders often become sodden at some point, when they may be quite dry at others; this makes it extremely difficult to know when to water them, as appearances are often deceptive. Then, in addition to the above, the plants growing in the house prevent the sun and air from playing fully upon the border, and in my mind there is no doubt that to secure the best results a Vine border should be devoted entirely to Vine roots. The outside border allows us to do this, and yet turn the house to profitable account by growing plants under the Vines.

There are two sides—sometimes many—to every method of culture advanced, but I fancy the tendency of many Vine growers of the present day has been to entirely ignore the advantages of outside borders; but after many years' experience with Vines growing under a variety of circumstances I have noticed that midseason Grapes invariably colour splendidly when the Vine roots are outside.—VITIS.

AS OF A DREAM.

YOU expressed sympathy with me in 1893 in regard to the two small hybrid Potatoes which I raised by fertilising the Mexican species *Solanum Fendleri* with pollen from my *S. tuberosum* seedling, Antagonist. I have frequently been questioned before and since then by others—those who can feel no farther than their breeches pocket—as to their being "money in it"—not in the pocket, but the seedlings obtained. These questions strike home. Generally I make reply, I cannot ride post to secure patents for my Potatoes; once they become cast upon commerce they belong to the public so far as I am concerned. If they were pinions, say, broken from the wheels of a watch, I could sit down and adjust new pinions at once, and command "money in it" for myself; or in the event of creating an instrument for the destruction of my species I could get it patented at once for my personal benefit. But in the cases of Nature's workings I have probably to wait for years before the good old Dame would enable me to answer the question in the affirmative. (My heaven will

never be looked forward to in connection with "money in it.") I have two curious coincidences, however, agreeably for my theme, which I will unfold for you.

Seventy-two years ago Stevenson caused his first steam-engine to run upon the first railway—Stockton and Darlington. I remember people who shook their heads at that time with but scant appreciation of there being "money in it." My uncle occupied a roadside inn at Sicklesmere in Suffolk. He was a retired stage coachman, and then as now "birds of a feather flocked together." According to them all the horses in the country were to be "thrown out of collar," all the coaches and all the coachmen, ostlers and helpers, were to vanish, and after them—"the deluge!"

Good old prognosticators! they have all travelled to their last bourne—at least, I should think so—if not, whoever of them are left will have seen from the small beginning the wonderful enterprise which now extends to every part of the globe, and to see there is "money in it." Particularly, too, in 1826, and within a few months after the trial of the Stevenson's steam railway engine to impress it for my memory—I was then nine years of age—myself and a younger brother was set by my uncle to pick up a pane of Potatoes in his garden—a very good garden, which John Fenn was very proud and fond of—the recompense for us youngsters to be a treat to Bury St. Edmunds pleasure fair. No Potatoes were ever gathered up by two boys quicker than those "early Shaws" in my uncle's garden, and from that time I date my interest in the esculent. Far be it from me, though, to push myself forward in a "bumptious" manner; but during the intervening years till now, wherever I may have been, the work on my part has been to improve and create largely towards the industrial enterprise and extension of a large commercial trade in a chief and indispensable national food, the *Solanum tuberosum*.

Allow me also to ask: From 1857, when the providential inspiration came to me in the old rectory garden at Woodstock anent the artificial cross fertilisation of the Potato, has there been any other aliment for food that has taken such a leap and bound? I have just been reading our Secretary for the Colonies speech at Liverpool. Mr. Chamberlain said, "One great principle is that every country should produce and should be encouraged and allowed and stimulated to produce articles for which by nature it is best fitted." Allow me to say that the Potato is one of our best permanent pabulums of food, and the supply should be quadrupled by cultivation in our English soil for which it is "fitted." As I am led to infer from Mr. Chamberlain's speech, aid is likely to be offered to our West Indies to grow their sugar, why not to us at home? Government money, say at about 2 per cent., in aid to grow Potatoes, Wheat, or anything else to work back our land into good husbandry and value, enabling us so much the more to depend upon ourselves to feed our millions all the more securely. There would "be money in it," directly and indirectly sustenance for stamina, for there is no produce in the world to equal the British for "sticking to the ribs."

I have read how the State of Denmark voted £100 in 1896 for "carrying on certain experiments" *re* the making of butter. I heartily wished our Government would help the British agriculturist after a like manner; the sort of aid and encouragement expressed would tend for us to produce British butter in much larger quantity and better than Denmark or any other State could send us. I fancy you have partaken of good butter at my cottage farm, made in Berkshire. But then I read and study the "Home Farm" articles published weekly in this "our Journal." The advice they afford us in our independent lines of action would be found hard to beat. But the cat appears to be jumping in the way you may read between the lines, of me "Colin Clout, as I go about, and up and down I walk and hear the people talk." But I have only just room here to say, that soon after you had seen my two little Fendleri seedlings, which began this "dream," I planted them in a reversed Seakale pot, to stand upon the soil of my seedling Potato trough in the glass house; so, at any rate, what I have said I hope you will think to be sufficiently interesting to have "whiled away the time," whilst the hybrids grow into details for my next paper.—ROBT. FENN.

[The history, accidents, and troubles attending the raising of the hybrids are detailed on page 3, January 5th, 1893, vol. xxvi., of the *Journal of Horticulture*. It was a bad beginning—the precursor, we will hope, of a good ending. Mrs. Fenn's butter is good. We say nothing about the "2 per cent." yearnings of her "Colin."]

BALL DECORATIONS AT CIRENCESTER.

I THINK a line *re* the arrangements of the supper tables at balls held on January 26th and 28th might interest the readers of the Journal. They struck me as being of an unusual character. I suppose there is no name better known as an exhibitor at all the leading summer shows than that of Mr. Jas. Cypher, and certainly not one more successful, and he appears to be equally as capable as a decorator of supper rooms.

On the present occasion the centre table was of diamond shape, on the centre of which was a pedestal surmounted by a Kentia, whose fronds drooped gracefully, forming quite a picture of itself. From the base of the pedestal to each corner of the table an arch was placed, forming a series of arcades, and from these were suspended flowers and foliage, such as Asparagus, various kinds of suitable Ferns, *Ficus repens*, Orchids, Lilies of the Valley, Anthuriums, Narcissus, and such like flowers. Between these arches were disposed elegant specimen glasses of the choicest flowers—of course, Orchids playing an important part.

On each of the other tables (which were round ones) was placed an

elegantly arranged basket, in the centre of which was a perfect little *Cocos Weddeliana* surrounded by choice flowers. Everything evinced the greatest taste and skill. I was too late, or I should probably have sent you a photo of the room, as I am sure it would have given pleasure to you.—T. A.

PEAR PRESIDENT BARABÉ.

ON our reporter going to the side table in the Westminster Drill Hall, on the 11th ult., to take a description of this Pear for publication, he found nothing but stalks. After products are removed from the Committee table they are arranged for inspection by the public, and no one is entitled to interfere with them. Even the judges of fruit in the dessert classes are only empowered to cut a stipulated number, and must leave the remainder intact. The gentleman, however, who discovered a Pear which gratified his palate is evidently generous hearted, for he invited a friend to share the feast, and they may now be interested to learn that a lynx-eyed pressman (not of this Journal) watched the connoisseurs, as he says, "clear the dish." This is mentioned for two reasons. (1) To remind our friends (who are very well known) that in a moment of

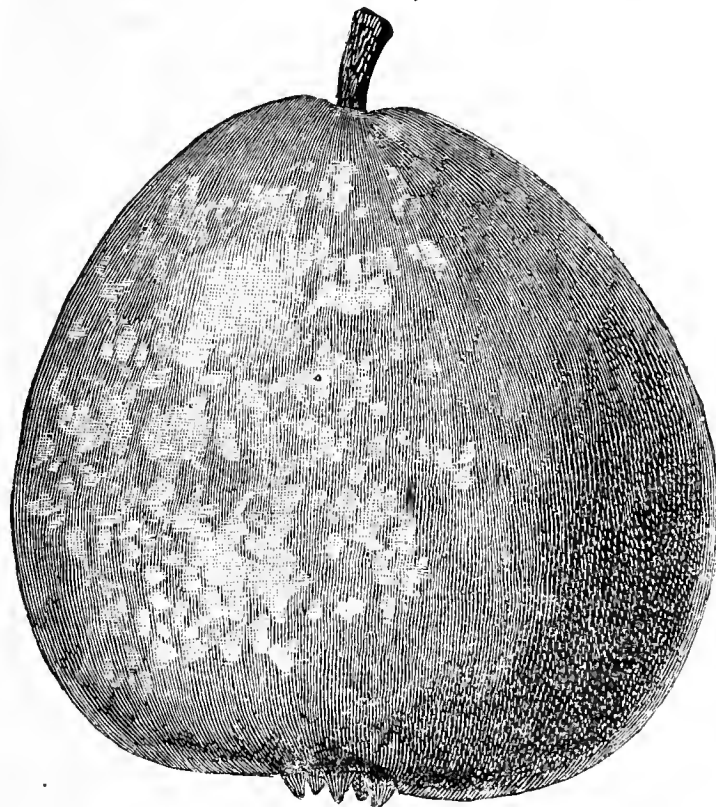


FIG. 15.—PEAR PRESIDENT BARABÉ.

forgetfulness they did not set a good example; (2) because they bore very practical testimony to the excellence of President Barabé Pear.

As good midwinter Pears are not over-plentiful, and as it is somewhat rare for a first-class certificate to be awarded for one at the beginning of the year, Mr. W. Allan of Gunton Park, the exhibitor on the occasion, obliged by sending us a couple of fruits, one of which is represented in fig. 15. The largest gathered weighed from 7 to 8 ozs. Our description of the Pear examined is as follows:—

Fruit, medium sized, 2½ inches wide and nearly the same in height; uniform, obovate; skin, lemon yellow, almost entirely covered with brown russet on one side, and rather heavily mottled with yellow and russet on the other; eye, very large with erect woody segments, set nearly level with the surface and surrounded by a clear lemon (*i.e.*, free from russet) ring; stalk, ½ inch long, stoutish, thickening towards the end, slightly oblique and set in a small shallow cavity; flesh, yellowish white, with a distinct yellow band next the rind, slightly coarse in the grain, yet at the same time not devoid of a buttery texture, sweet, juicy, but slightly sub-acid, imparting a rosewater flavour, pleasant and refreshing. President Barabé is a welcome addition to December and January Pears. It is of French origin, and was, we think, introduced by Messrs. James Veitch & Sons, Ltd., who describe the tree as hardy and very prolific, forming good cordons or pyramids on the Quince stock.

Mr. W. Allan says that President Barabé on the Quince stock is grown on a south wall in Gunton Park Gardens, Norwich, the tree being vigorous and very prolific. He remarks that the fruit two seasons out of three requires thinning to avoid overcropping. In his district it is distinctly a January Pear. Mr. Allan continues, "This late Pear ripening so well here, and proving so excellent in flavour, augurs well for its success in warmer counties, as some of the well-known late varieties, like *Nec Plus Meuris*, do not ripen well here, even on south walls."

GREENHOUSE AND CONSERVATORY FLOWERING SHRUBS.

TEN MINUTES' NOTES.

THE older fashioned of these seem to be conspicuous by their absence nowadays. It is my intention to name a few, with concise cultural notes, that flourished so well under the treatment given them by Mr. Channing in the conservatory at Lillesden, Hawkhurst, Kent, where some years ago I was foreman.

LUCULIA GRATISSIMA.

This was a great favourite, planted against a shady wall in a compost of peat, loam, leaf soil, and sharp sand. It grew luxuriantly, and in early winter was clothed with its flesh coloured, fragrant flowers. The roots were confined, and the border well drained. During the growing season this plant needs abundance of water, with daily syringings, withholding as soon as the flower buds are seen until such time as it starts in growth again. The waterings in the intermediate space must be guided by the absolute requirements of the plant only. Pruning is not imperative where space is unlimited. The dead flowers and irregular shoots may be removed, and the remainder tied in their places; or it can be spurred back in February if preferred. Propagation is achieved by cuttings taken with a heel when the young growths are 3 or 4 inches long, inserting without delay in previously prepared pots with plenty of sharp sand, placing them in a close propagating pit, and preventing flagging by occasional dewings. When rooted the hardening process must be very gradual.

HABROTHAMNUS (CESTRUM) ELEGANS.

An old favourite under a new name. This plant is good for walls, pillars, or roofs. Under the planted-out system and with liberal treatment it may be said to be always in flower; an open moderately rich soil, with plenty of water during the summer months, are its requirements. Do not allow the growths to get too crowded, and you will be able to cut armfuls of its dull red flowers. An occasional dose of liquid manure assists plants of weak growth. Cuttings root freely under ordinary treatment. It makes a suitable amateur's plant, as it is not fastidious as regards temperature, soil, or position. Occasionally green fly is troublesome, especially in the flowers; fumigation will clear them, with good syringings afterwards. Mealy bug, too, takes a liking to this plant: when the attack is very bad a radical cure is to cut the plant hard back, burn all refuse, and paint the pillar or rafter well with paraffin.

LONICERA SEMPERVIRENS.

A beautiful evergreen climber is this, flowering nearly all the year round, though naturally more profusely in spring. When pruning always remember it flowers on the young wood. Its beautiful scarlet and yellow flowers are produced in whorls. Partial shade seems to suit it better than too much sun. Ordinary light fertile soil suits its requirements. Given this, and in a cool greenhouse, with plenty of head room, it is a most desirable plant to grow. It is easily raised from cuttings, or root division where practicable. Late pruning will retard the flowering season.

PLEROMA MACRANTHA, SYN. LASIANDRA.

One so rarely sees a blue flower in winter, or perhaps I should be more correct in this instance in saying bluish purple, which this plant produces, that the wonder is it is not more generally grown. It was planted out, and covered nearly all the gable end of the conservatory, where it flowered splendidly all the winter, the dark glossy leaves forming a beautiful contrast to the many large flowers. A compost of two parts loam with one each of peat, leaf soil, and a sprinkling of sharp sand, may be recommended. This plant succeeds best at the warmer end of a conservatory, and needs copious supplies of water during the growing season, and such rest as "A.D." (page 553, last vol.) advocates, at the proper season. The flowers will not last when cut, but their sight on the plant is ample compensation.

CHOROZEMAS.

I fancy the varieties we grew on balloon trellis and also as climbers at Lillesden must have been *C. Chandleri* and *C. cordatum splendens*. The plants in pots used to be treated somewhat like Heaths. A compost, with peat predominating, was used. After flowering the pot plants were stood under the shade of a tree, the pots turned on their sides during heavy rains, and taken indoors in the autumn. As soon as growth commenced the plants were cropped close with a pair of shears. Careful watering is needed at this stage. The pillar plant was treated alternately with rest and growth annually, and in its season was a "thing of beauty." Thrips were troublesome at times.

SPARMANNIA AFRICANA.

These were grown in large pots, and well repaid for generous treatment. As the spring advanced and the season of flowering exhausted they were cut hard back, a little of the surface soil removed, and top-dressed with rich compost, then placed on ashes outside in the full sun, reducing water until growth was on the move. No more than ordinary attention is needed, except giving the plants the benefit of a little weak liquid manure occasionally. As autumnal weather comes along wash the pots, examine the drainage, and remove to winter quarters. Strong shoots should be produced, and bristling under the leaves will be found buds in all stages, which the genial warmth of the conservatory soon develops into a galaxy of curious white flowers, surmounted by

yellow powdery stamens, which remain erect after the petals fall. It is readily propagated by cuttings in heat.

OTHER PLANTS.

Other plants well grown there were *Lapageria alba* and *rosea*, *Bougainvillea glabra* (which flowered splendidly), *Stigmaphyllon ciliatum*, *Bignonia venusta*, *Jasminum grandiflorum*, *Mandevilla suaveolens*, *Plumbago capensis*, *Tecoma jasminoides*, *Boussingaultia baselloides*, *Thea viridis*, *Clematis* in variety, and last, but not least, were the splendid *Camellias*, which, after receiving good support and copious waterings and syringings during the growing season, paid back a thousandfold with gorgeous masses of flowers, to brighten the dull days of winter.—GEO. DYKE, *Stubton Gardens, Newark*.

THE VANISHING CORN FIELDS.

I HAVE to thank "A. C." for his flattering remarks (page 81) concerning the literary merit of "A Dream of the Future," and I am not surprised that he should have described the sentence he singled out as a startling one. There can be no doubt that the small quantity of corn grown in this country creates a state of affairs which may at any moment be turned into a grave national danger unless steps are taken to provide against contingencies. Let us admit that at the present time there are thousands of acres of land in Britain now laying idle which ought to be turned to account for Wheat growing. Then surely something could be done to enable farmers to grow Wheat at a slight profit, and thus make our danger less for a time, although we could not grow enough to provide a full supply for our teeming population.

This, however, could only be a temporary arrangement, because with a population increasing so rapidly we should each year produce a smaller proportion of the Wheat required. Perishable crops, such as vegetables, fruit, and herbage for cattle, would have to be more largely grown each year, till in time, though perhaps at a very distant date, the whole of the available land in Britain would be required for these purposes. Then what about our supply of corn? Fortunately grain has one advantage—viz., that it can be stored for several years without seriously deteriorating in quality. It is thus easy to see that as this little island becomes more closely packed with human beings, Wheat is the one necessity of life which can be most easily be "stored" ready for the dark hour of need.

It seems to me, therefore, that those who guide the helm of State in the future will be forced to consider it their imperative duty to store up a few years' supply of corn regularly, and that such a duty is second only in importance to that of maintaining British supremacy upon the "ocean wave." This may not appear to many the right way to march "onward," because in a modified form, and for different reasons, the practice of storing grain was started in the "land of Pharaohs" long ages ago, when Joseph was brought from the dungeon to interpret his monarch's dream. Still, it has become a firm conviction with—ONWARD.

BEST FLAVOURED PEARS.

AMONG varieties which rank high in flavour, only a limited number seems generally known, as correspondence on the subject in your paper shows gaps in the supplies. This ought not to be so, as really good varieties exist, and might be expected to appear on such opportunities as are offered by the Veitch prizes for flavour at the Drill Hall meetings, but where only one or two dishes figured on the last occasion.

Glou Morceau, named by Mr. G. Dyke, is doubtless a fine Pear in its season, but it requires favourable southern conditions on walls, or espaliers and bushes, as in walled enclosures, or where other good shelter is afforded. In comparison with *Beurré Rance* and *Bergamotte Esperen*, I have found *Marie Benoist*, *Olivier des Serres*, *Prince Napoleon*, and *Doyenné d'Alençon* preferable, and as they are in season from January to March their appearance at the Drill Hall would not be otherwise than opportune. I have grown them for fifteen years, and thus write from experience.

The new variety *Le Lectier* should also be included, for being in season in January and February, as well as *President Barabé*, newly introduced at the Drill Hall, and found to be a first-rate midwinter Pear, I think it cannot be too highly praised, and reminds me of Thomson's, a superior October and November Pear that should be on every garden wall with a southern aspect, together with *Beurré Bosc*. For *Nec Plus Meuris* I have a good word to say, as grown in bush form.

The younger branches of a family alluded to by your correspondent would doubtless be delighted to have Pears earlier than are provided by *Seckle*, which with me is all honey and water, and I should recommend bushes of *Citron des Carmes* and *Doyenné d'Été* to eat from the tree in July and August respectively, with *Jargonelle* and *Brookworth Park* to follow. The somewhat later best sorts not mentioned by Mr. Dyke are *Madame Treyve*, *Louise Bonne de Jersey*, *Beurré Hardy*, and *Emile d'Heyst*, while if very large Pears are appreciated *Souvenir du Congrès*, *Beurré Diel*, with the December Pear *Nouvelle Fulvie* (on a south wall) should be added. In appearance, *Marguerite Marillac*, an October Pear, cannot be beaten, as seen at the Crystal Palace Fruit Show.—H. H. R., *Forest Hill*.



WEATHER IN LONDON.—The mild weather which has characterised the weather for several weeks still remains. Last Thursday, Friday, and Saturday were cool in the evening, and rain fell slightly on the latter day. Sunday morning brought heavy showers, but Monday was a magnificent day. Rain fell during the early hours of Tuesday morning, and the day was dull throughout. Wednesday was fine, but not very bright.

WEATHER IN THE NORTH.—Westerly winds have prevailed during the past week, and the weather, while variable, has been generally fine, with high temperature both day and night. Friday was particularly fine. On the nights of Sunday and Monday a good deal of rain fell. Tuesday morning was clear and somewhat colder.—B. D., *S. Perthshire*.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Royal Horticultural Society will be held on Tuesday, February 8th, in the Drill Hall, James Street, Westminster, 1 to 4 P.M. At three o'clock the annual general meeting of the Society will be held in the Lindley Library, 117, Victoria Street, S.W. The Committees will meet as usual.

DEVON AND EXETER GARDENERS' ASSOCIATION.—At the last fortnightly meeting of this Gardeners' Association, the essayist for the evening being Mr. George Lee, gardener to Miss Lavers, Upton Leigh, Torquay. Mr. W. Rowland, gardener to Mr. W. Brock, was in the chair. Mr. Lee, who is a specialist in Orchid culture, traced the history of the Orchid mania from the time that Swainson explored the Brazilian forests, life in hand, extricating plants from malarious swamps alive with lizards, alligators, and other dangerous beasts of prey, sent home to England the Cattleyas, with their gorgeous hues and majestic forms. The essayist also gave exhaustive cultural details, which were most interesting.

STRAWBERRIES FROM SEED, OR THE CULTIVATION OF THE ALPINE STRAWBERRY.—This was the subject of a paper read by Mr. James Hudson of Gunnersbury, before the members of the Reading Gardeners' Association, last week, when Mr. C. B. Stevens presided over a good attendance of members. The subject was certainly a new one, and perhaps the first time that a paper on this particular fruit has been given before a gardeners' association. In the discussion which followed all the members taking part had to plead ignorance of the cultivation of the Alpine Strawberry, but many of the gardeners will no doubt be giving it a trial. A hearty vote of thanks was accorded Mr. Hudson for his interesting paper. A box containing some 120 to 140 spikes of well grown Lily of the Valley, many having fourteen and fifteen bells each, was shown by Messrs. Rigg & Fixter, Caversham, and attracted great attention.

THE CAPE COLONY AND GARDENERS.—One of the best authorities in the above Colony having been written to on subjects which are indicated has favoured with the following reply:—"Your letter, dated November 19th, to hand. Let me assure you it affords me great pleasure to give you or any gardener in the old country such information as may be of use. I have now been in South Africa for seventeen years, during which time I have been in the Transvaal, Orange Free State, and in all the larger towns in the Cape Colony. South Africa is the last place I would recommend any gardener to come to look for work. The few gardeners that are in charge of parks or botanic gardens in the different towns command salaries from £250 to £350 per annum. There are very few openings. In Johannesburg there are hundreds of gardeners who cannot get work at their trade, and those who do have to work for about 5s. per day, which is nothing like a living wage in that part, as you cannot get a cottage to live in for less than £10 per month. As a seed-growing country I think it would be far before anything in Europe. If anyone had sufficient capital and had certain sale for seeds I think a fortune could be made. I should say Balsams seed more freely here than anywhere, and Dahlias are also very free to seed, as are innumerable other things, including vegetables. There are occasional droughts, which have been very severe this year, but these are not like the poor, "always with us." For a seed farm great care would be exercised in choosing a suitable spot, and a good capital would be essential, as many persons have ruined themselves at nursery work, just from want of sufficient means. On any other terms I would not advise any gardener to come out here, especially a married man."

GARDENING APPOINTMENT.—Mr. W. Heath, head gardener at Woodland's Vale, Ryde, Isle of Wight, has been appointed to a similar position at Wokefield Park, Berks.

ROYAL BOTANIC SOCIETY.—At the last meeting of the Fellows of the Royal Botanic Society held in the museum at the Society's gardens, Regent's Park, Mr. C. E. Layton presided, and there was an unusually large attendance. Four new Fellows were elected, and nine were nominated for election at the next meeting. Professor Henslow read a paper on "Plant Variations," which he illustrated by means of a large number of photographs reflected upon a screen.

MR. W. HOWARD.—The following has been forwarded to us from a Kingston paper:—"Mr. W. Howard, the manager at Messrs. Veitch & Sons' Nursery, Kingston Hill, is about to relinquish that appointment. He has been connected with the firm for thirty years, and is highly respected by prominent men in the horticultural world. His knowledge of home and foreign plants is great, and he is looked upon as an authority in the profession. The good wishes of many will follow Mr. Howard into his new sphere of work."

ROMAN HYACINTHS.—I send a photograph of our Roman Hyacinths which number about 500 plants. They were taken out of boxes a fortnight before being photographed, and are still as good as ever. I gave my method of culture in the autumn of 1897, and a brief recapitulation may be of interest to some persons. I place fifty bulbs in a box, of which the dimensions are 2 feet by 1 foot and 3½ inches deep. This is well drained, and a fairly moist compost, consisting of one part loam and the other leaf soil and sand, is used. The bulbs are placed evenly on the surface of the boxes half filled with the compost. I then put the boxes into a stack by placing an empty box, reversed, over every full one in the corner of a rather damp shed. They are left like this till the growths are 2 or 3 inches long, when they are gradually exposed to light till quite green. A gentle heat brings them into flower as wanted.

—R. BASSIL, *Shooters Hill Gardens, Pangbourne*. [Though the photograph is, unfortunately, unsuitable for reproduction, it may easily be seen how successful is the system of culture adopted, and upon the results of which we congratulate our correspondent.]

THE ROYAL FAMILY AND FLOWERS.—The members of the Royal Family confess to a great love for flowers of all kinds. The Queen (according to the "Woman at Home") has a special weakness for Lilies of the Valley and Violets, and cares to have them about her rooms. Her intimate friends, knowing her favourite blossoms, send her these in profusion upon her birthday, at Christmas, and the New Year. Violets, the pet flowers of the late Emperor Frederick of Germany, have become quite sacred in the eyes of his widow, and she has often been deeply touched when, paying her annual visits to England, mere strangers have offered Violets "in remembrance of her beloved husband." The Duchess of York is much interested in the cultivation of flowers. For her own personal adornment she prefers Lilies of the Valley and white Roses. The Princess of Wales, however, is the most ardent enthusiast for flowers, and is never content unless her rooms are simply one mass of scented blossom. In her own boudoir at Marlborough House and at Sandringham, every available table or stand bears a burden of plants in pots, and vases frequently replenished with choice cut flowers; and in the hall at Sandringham the Palms and greenery are a sight to behold. As for the Prince of Wales, he cannot endure to be without his "buttonhole."

THE GARDENERS' BENEVOLENT BALLOT.—As Mr. Outram has drawn attention to the number of lost votes arising from the non-signing of voting papers, permit me to suggest that to render the election a genuine ballot, the Secretary should stamp every voting paper with an impressed stamp of the Institution, and number it legibly in red ink. He should have a list of subscribers in a book, arranged corresponding to the numbers on the ballot paper. In that case signing would be needless. Should the authenticity of any ballot paper be disputed, the scrutineers alone should have power to verify or otherwise when the counting was in progress. No paper should be sent to anyone whose subscriptions due had not been paid. It is monstrously unfair that such persons should be recognised as subscribers at all. This plan, whilst practically rendering improper voting impossible, would be a real ballot, and not as now a sham one. Then no voting papers should be accepted that were not returned at least two clear days before the day of election into the Secretary's hands, and that official should be held responsible for placing them in the hands of the scrutineers just as received when they retire to count the votes. When the counting is proceeding, no person other than the scrutineers should be permitted in the allotted room until the counting is completed.

—A. D.

— A ROSE PUZZLE.—Will any reader of the Journal tell us how to understand the following class for Roses, as copied exactly from the Newcastle-upon-Tyne summer show schedule for 1898:—"Cut flowers.—Class 52, thirty-six Roses, twenty-four dissimilar, in triplets." Would it not have looked more like business if it had been twelve varieties in triplets? which I presume it must infer. Nobody seems to know.—GEO. FINLAY.

— FLAVOUR FROM LEAVES.—M. Jacquemin, a French pharmacist, has invented a process by which he says he can form from the leaves of various fruit-bearing trees and shrubs the flavours that are characteristic of the fruits themselves. From Apple tree leaves, crushed and fermented, he obtains a liquid possessing the fragrance and taste of Apples, and from Vine leaves a beverage resembling wine. His theory is that the peculiar flavour of Apples, Pears, Grapes, and berries is prepared in and derived from the leaves of the plant, and in our opinion this is true.

— THE WOLVERHAMPTON FLORAL FÊTE.—This compares well with similar undertakings in other towns. Last year's show made a profit of £421 10s., the gross takings, £2390 2s. 4d., showing an increase of £87 16s. 9d. on the present year. At the annual meeting of the Committee Mr. S. Dickenson made some gratifying observations on the success of the Fête during the past nine years, mentioning that the total profit in that period had been £3956 18s. 6d., out of which the Committee had built shelters, greenhouses, and paid for music in the public parks, as well as placed to the reserve fund no less than £786 12s. Wolverhampton, therefore, has cause for gratitude to those who promoted, and those who carried on this undertaking,—("Birmingham Daily Argus.")

— LIVERPOOL HORTICULTURAL ASSOCIATION.—On Saturday evening last Mr. Thomas Foster presided at the nineteenth annual general meeting. The Secretary's report, whilst regretting the apathy of the public in supporting the shows, classed the summer show held in Sefton Park and the autumn show in St. George's Hall as amongst the finest held by the Association. The Sub-Treasurer's account showed a loss of £357 13s. 3d. on the two shows, an item which ought not to appear this year if the public at large will only give their valuable support. Subscriptions of 3 and 2 guineas respectively were granted to the Gardeners' Royal Benevolent and the Gardeners' Orphan Funds. The balance in hand is about £80. The Right Hon. the Lord Mayor, Alderman Jno. Houlding, was elected President for the ensuing year; Arthur Crossthwaite, a Vice-President; and Messrs. Jas Bethell, E. Finch, and Geo. Eaton to fill vacancies on the Committee. Messrs. Disley and Dickson were respectively nominated for the secretaryship, each receiving twenty-three votes, the Chairman's casting vote being in favour of Mr. Dickson. A sensible proposal, made by Mr. Hitchman, that the Committee be empowered to fix the show dates before the date of annual meeting, was received with approval. It is proposed to hold a grand spring show in St. George's Hall and the usual popular Chrysanthemum and fruit show. The usual votes of thanks closed the proceedings.—R. P. R.

— THE R.H.S. EXAMINATION.—I observe you have been giving an inquirer some useful advice with respect to this examination. It tallies entirely with my own views. April is not far off, and those who purpose sitting at the next exam should make the best use of their time. Generally the examinations have little value for anyone except those who may be gardeners, or contemplating to become such. Then the grades should be dissociated, having a purely practical one, and a purely theoretical or scientific one, leaving to students option as to which they should enter, but granting no first-class awards until both grades had been well passed. That sort of exam would tend then to show what amount of practical knowledge the college, laboratory, and correspondence crammed candidates possessed. That questions in theory get a higher number of marks than do more important ones for gardeners in practice, seems to be the case. But apart from all the existing defects of the present system, I always strongly advise young gardeners to submit themselves to the examination. If they set themselves earnestly to work to master the desired knowledge, and even then fail to obtain a high number of marks, they will have done themselves immense good. That is a result worth more than any mere pass honours. Shakespeare puts into the mouth of the fallen Wolsey the bitter lament, "Had I but served my God as diligently as I have served my king, He would not in mine age have left me naked to mine enemies." This represents throughout all time the inevitable bitter cry of old age over the follies and wasted opportunities of youth. How many a young gardener of to-day is there fooling away time and opportunity who later in life may not have occasion to re-echo in paraphrase the remorseful cry, all too late, of the fallen Cardinal.—A. D.

— NOTES ON PEARS.—My experience of Beurré Rance in this district for the past five years is identical with Mr. Easter's and Mr. Dyke's—namely, useless for dessert, and I may say the same about Nec Plus Meuris. I have them here on a good south wall in fairly good loam on a sandstone formation, but I have not yet had the pleasure of tasting a good fruit. I have come to the conclusion that it wants a warm atmosphere. Glou Morgeau, Beurré Diel and Louise Bonne of Jersey have done excellently on the same wall and situation.—T. HANSON, Garforth, near Leeds.

— MASSACHUSETTS HORTICULTURAL SOCIETY.—We have received the schedules of the six exhibitions of this Society that are to be held during the year 1898. We observe that at the six shows a total of upwards of 8000 dollars is offered in prizes in 786 classes. These comprise practically all phases of gardening, including those for greenhouses and gardens. The rules for exhibitors are brief and generally straight to the point, and no difficulty should be experienced in interpreting them. The shows will be held in the Horticultural Hall, Boston, as follows:—Spring Show, March 22nd, 23rd, 24th, and 25th; Rhododendron Show, June 2nd and 3rd; Rose and Strawberry Show, June 23rd and 24th; Plant and Flower Show, August 31st and September 1st; Fruit and Vegetable Show, September 29th and 30th; and Chrysanthemum Show, November 8th, 9th, 10th, and 11th. The Secretary of the Society is Mr. Robert Manning.

— HESSLE GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—A meeting of the above Society was held on Tuesday, January 25th, Mr. Geo. Picker, Hesslewood, in the chair. The essayist for the evening was Mr. H. J. Clayton, Grimston Park Gardens, Tadcaster, and the subject, "Notes on Gardens and Garden Management." The essayist dealt with gardens, first going right back to the Creation—e.g., the Garden of Eden. He then followed with other notable gardens mentioned in history, and finished by describing an ideal garden of the present day. In his notes on the management of gardens he spoke of the advantages probationers derived by serving at least three years in the outside gardens, and pointed out that to grow good vegetables and hardy fruits was equally as hard a matter, and required as much care and forethought, as to cultivate the choicest Orchids. Mr. J. S. Barker showed well-flowered plants of *Lycaste Skinneri* in variety.—G. W. G.

— ROMANCE OF INSECT LIFE.—At the Public Hall, Woking, on Sunday afternoon, Mr. Fred Enock, F.L.S., F.E.S., once a resident of that town, spoke about "The Wonders and Romance of Insect Life." There was a good attendance, and the lecture, which was illustrated by lime-light views of exquisite beauty, was intensely interesting. Mr. Enock first dealt with the green fly. Millions and millions may be found on a single tree, sucking away its life-sap, and incalculable injury would be done by this pest were it not for the check which Nature has provided in the wasp fly. This parasite lays its eggs in the body of the green fly, and the maggot feeds upon the flies, which it destroys at the rate of a hundred or more per hour. Gardeners destroy these maggots, but they are among their best friends, for each one lives a fortnight, and during the whole of that time is destroying the green fly. The maggots may be known by the way they wave their bodies about. The wasp fly, it is interesting to note, has two compound eyes, each containing some 11,000 separate lenses. Then there is the gall mite, only one-four-hundredth of an inch long, which is terribly destructive to Black Currant bushes; but here, also, there is a parasite in the shape of a maggot which eats these tiny grubs. The Willow-tree gall is produced by the saw fly, whose egg-laying apparatus is shaped exactly like a saw. This insect does not saw right through the Willow leaf, but only half way. It then forces its saw between the upper and lower skin of the leaf and lays its egg in the farther extremity. The irritation thus set up—on the same principle as a thorn in our finger—produces the gall, which is the home of the maggot into which the egg changes, and likewise its food, until it is big enough to leave, when it becomes a chrysalis and fly in the ordinary course. But although these galls are so common the fly itself is comparatively scarce, owing to the destruction of its eggs by a parasite. This parasite pierces the gall and kills the grub with a tiny drop of acid, and then lays an egg of its own inside the gall, the grub of which, when hatched, eats all the poisoned grub except its skin, which it utilises as a cocoon, to save itself the trouble of spinning one. The devil's coach-horse beetle is another interesting insect, and has a marked predilection for green caterpillars—or London restaurant caterpillars, as the lecturer prefers to call them. It is therefore useful, and should not be destroyed. The lecturer concluded with an account of some discoveries in the insect world which he had made, and, referring to his three years' residence in Woking, said he believed he was then locally known as "The Madman," because of his fondness for insect hunting.

— **PROTECTING PEARS.**—The protection by cotton bags of growing fruit recommended by "A. D." a few weeks ago would probably interfere too much with the maturity, perfection, and colouring of the fruit. I tried successfully some years ago the use of similar bags, made of cotton in very transparent open net, useful as mosquito netting. It admits plenty of light and air, thoroughly excludes all insects, and repels birds, and I know of nothing better for the purpose. —H. H. R., *Forest Hill*.

— **INDIAN SHADE TREES AND THE COFFEE PLANTATIONS IN NYASALAND.**—A proposal was made some time ago for the introduction of the seeds of certain trees from India and Ceylon into British Central Africa, for the purpose of supplying shade for the Coffee plants in the numerous plantations which are now being opened up in the protectorate. The suggestion was referred home by the Commissioner, and the Foreign Office requested Mr. Thiselton Dyer, the Director of Kew Gardens, to report on the subject. As a result of Mr. Thiselton Dyer's reports, her Majesty's Commissioner has determined rigidly to enforce the regulations for the prevention of Coffee disease in Central Africa, which prohibit the importation of seeds from India and Ceylon. In his report Mr. Thiselton Dyer says:—"The Coffee disease was introduced into Fiji through the instrumentality of Tea seeds from Ceylon. Notwithstanding the splendid attempts made by Sir William MacGregor to stamp it out, it ultimately completely destroyed the Coffee industry, which was the most promising planting enterprise in the colony. The Germans, by some unknown means, have succeeded in introducing the disease into their African territories. In the face of these undoubted facts, it would, in my opinion, be the height of folly to run the smallest risk of introducing the disease into British Central Africa, where its presence would be an irreparable disaster. Knowing the mechanical way in which such work is carried out by native officials in India, I do not think that any stipulation as to locality is of the smallest value. Whatever was stated to the contrary, the first parcel of seed would, in all probability, come from a plantation reeking with disease. The present request is the more unnecessary, as according to a Coffee planter in Nyasaland, who is well acquainted with Coffee cultivation in Ceylon, a local African tree, *Albizia fastigiata*, is admirably adapted for a shade tree for Coffee. If this is not sufficient, the Rain Tree, or *Pithecolobium saman*, might be tried. The seed can be obtained in abundance from Jamaica, and this would be perfectly safe." —("Times.")

— **GARDENS IN ENGLAND AND ITALY.**—At the galleries of the Fine Art Society in New Bond Street may be viewed a new series of water-colour drawings of gardens by Mr. George S. Elgood, who has for so many years enjoyed popularity as an artistic authority on those combined efforts of Nature and the hand of man that go to the making of beautiful gardens. Hitherto Mr. Elgood has loyally chosen as subjects for brush and pencil the gardens of England, but for this occasion he has been working chiefly in a sunnier part of the world. In the gardens of Italy, he reminds us, we are to seek the origin of our more formal phases of horticulture, especially the occasional introduction of statuary sometimes ventured upon by owners of picturesque seats sufficiently distant from the grime of London fog and smoke. At Pompeii were found the roots of the Box borders dear to our grandparents, and at La Cava the square-clipped hedges and topiary work, the prototypes of our seventeenth century gardens. Palermo provided the artist with a little mine of wealth from the pictorial standpoint, both in private and public grounds, where lovely surroundings form a setting for the more conventional results of special design. For the Yew-clipped hedges and elaborately cut devices which still border many a pleasant walk, whose well-swept, tyrannical order repels the lover of wayward picturesqueness, Mr. Elgood has an affection that belongs to historical association. The more formal subjects are clothed in the glamour of Old World peace, while on the other hand there are many in which the studied skill of the gardener is modified by the bold growth of blossoms outgrowing the restrictions of space; and when this happens under artistic direction, the contrast between festooned arches and the patches of free luxuriance has not less but a different sort of charm. Illustrations of this will be found in some of the gardens at home, to which we may return after appreciating the grounds of ancient monasteries, the Lemon groves of Palermo, and the flowers and Olives of Florence. Profuse in beauty is the Rose garden of Newlands, Hampshire, belonging to Colonel Cornwallis West; and a combination of graceful formality and freedom will be seen in several drawings of Great Tangle, where Mr. Wickham Flower helps to keep up the reputation of Surrey for a soil that is so generous to floriculture. Once again, too, Mr. Elgood has painted such famous spots as Hardwick and Easton Park, and the delightful Deanery Garden at Rochester.—("Daily News.")

— **HOEING.**—The gardener will always find abundant success if he will not neglect the use of the hoe. It is wonderful what tillage will bring out of the soil. Most men must till to keep down weeds. They do not realise that the benefits of this work are far above any mere weed killing. By persistent cultivation we get the soil loose and mellow, porous and light, so that air can enter and roots freely branch, and distribute themselves throughout the entire mass of earth within their reach. Furthermore, tillage is a breaking-up process, particles of rock and organic matter being reduced in size and made available for the nutrition of crops. Then there is, says a writer in an American contemporary, the immeasurable effect of shallow surface cultivation in forming a mulch upon the surface of the ground, a thin layer of loose, dry earth to cut off the rise of moisture to the surface, and its subsequent evaporation and loss to the use of the growing plants. Water in a drought is a priceless boon to vegetables, and conserving the supplies of moisture is one of the most vital subjects with which the cultivator has to deal. Tillage is to a certain degree manure, as was claimed by Jethro Tull of old.

— **WATERING HOUSE PLANTS.**—I am satisfied that not one person in twenty is aware that too much water is more dangerous to the plants than too little. Some gardeners seem to have the idea that to take a watering pot in hand to supply the needs of plants is an easy duty, and that to give a dash here and to soak the soil there is all that is needed. One thing is to be observed: All plants under all circumstances, nor indeed the same plants under different circumstances, require the same amount of water. It is necessary, therefore, to study the nature and habits of kinds, so that each may be treated according to its needs. A vigorous blooming plant, say a Fuchsia or Pelargonium, might be said to represent the maximum need of water; the same when in a state of rest, in cool damp weather, the minimum requirement as to this. Therefore, to give exactly the same quantity of water in both conditions named would be to cause harm by not giving enough water to some and too much to others. One safe rule is to wait until the ball of earth begins to get rather dry, and then to give enough water to moisten the soil through and through. Then do not water again until the former state of dryness is reached, be that time six hours or six days.—("Vick's Magazine.")

— **PEAT SOIL.**—Everyone knows that there are many plants which prefer to grow in peat soil rather than in earth as we are generally accustomed to meet with it. Plants which have this preference are usually those which produce an enormous number of very fine hair-like rootlets. It is not that there is anything peculiar in the soil itself which leads to this preference, but from the often verified fact that rootlets need air just as much as do leaves. It is impossible for the plant to live without some proportion of air being absorbed by the roots. A growing plant soon dies when the roots are immersed in water. It is, in fact, smothered for want of air. Roots of comparative strength can force their way through the compact soil, so as to reach the air confined in the various pores; but the hair-like roots cannot do this. They have not the vigour necessary to force their way. Soil, therefore, which is at once moist and penetrated by atmospheric air, as peat is known to be, gives these plants an opportunity to readily make their way, a privilege of which they would be deprived in heavier soil. So it follows that the point of the superior value of peat soil for some plants is a question of atmospheric air, rather than the chemical condition of the soil.—("Meehan's Monthly.")

— **MANY VARIETIES ON THE SAME TREE.**—It has always seemed a good idea for anyone fond of variety, with a limited amount of space, to have a number of kinds grafted on the same tree. In this way an Apple, Pear, Peach, or Plum could be made to produce a varied collection; but the theory has not worked out in practice, for the reason that some varieties are constitutionally more vigorous than others, and the stronger growing varieties soon take all of the food to themselves and starve out the weaker ones. With a little good judgment in selecting varieties of uniform character, the idea may be worked out (says "Meehan's Monthly") to a satisfactory conclusion, or weaker varieties may be given a position at the top of the tree, for there is always more strength and vigour to be obtained in that position than in the lower portions of the tree. When there is little difference in the constitutional vigour of varieties, the plan may be worked out to a greater satisfaction. In the Peach, for instance, there is very little difference in the characteristic noted. Nearly all Peach trees have about the same ratio of growth, and, moreover, the Peach is inclined to be a round-headed tree, with about as much vigour in the lower branches as in the upper ones. There ought to be more success in this line of experiment with the Peach tree than with any other class of fruits.



SOBRALIA LUCASIANUM.

THE tribute paid to Sobralias by Mr. S. R. Jones, in writing for information on *S. Lucasianum*, is thoroughly deserved. When well grown they are exceedingly handsome Orchids, for although the individual flowers do not as a rule last in a good condition for a long period, fresh blooms are freely produced, and so a succession is kept up. Most of the species have brilliantly coloured blossoms, and amongst the best *S. Lucasianum* (fig. 16) must be given a prominent place. A specimen of this was exhibited by C. T. Lucas, Esq., Warnham Court, Horsham, before the Orchid Committee of the Royal Horticultural Society on June 21st, 1892, when a first-class certificate was awarded for it. This is a splendid form, the flowers being of large size. The lip is broad and somewhat flattened, soft rosy mauve in colour, the throat being light yellow. The sepals and petals are white, faintly suffused with rose, the whole making a charming combination.

SACCOLABIUMS.

Though not so popular now as they were some years ago, the species comprised in this genus are very beautiful and free-flowering Orchids, and no collection of East Indian kinds is complete without a few at all events of the better known kinds. As a rule the flowers are small, but they are produced on long showy racemes in many cases—in others they are smaller, containing fewer but larger flowers, such for instance as the beautiful *S. bellinum*. Most of the known kinds come from India and the islands about the Malay Peninsula.

Naturally, then, they require very hot and moist treatment the whole year round, but especially when growth is most active. In the majority of the kinds this is from February or March until late in autumn, and some of the winter-flowering kinds, as *S. giganteum*, may be almost said to never rest. Not only do they require heat and moisture, but an abundance of light, plants heavily shaded never flowering so freely as others kept in a good light the whole year round, and only shaded sufficiently to prevent injury to the foliage. Some do best in large pots, such as old heavy specimens of *S. Blumei*, *S. retusum*, or *S. guttatum*, but the majority are most satisfactory in baskets suspended from the roof, this, too, being most suitable for smaller plants of the above mentioned kinds.

With regard to potting or basketing, this was referred to somewhat in detail recently, and it only remains to say that the smaller the plant the narrower the receptacle should be for it. The best time either for repotting or surface dressings is in early spring just when the tips of the roots are seen to be starting into growth, and it may be noted in passing that towards the end of the season's growth these will be seen to cloud over, and when this is noticed a slight reduction in the water supply should be made. At other times the sphagnum about the roots should never be allowed to get really dry, and when root and top growth are both active a very free supply should be allowed.

This necessitates very free drainage, and the more open the material about the roots the better. During the winter months a minimum temperature of 60° is ample; on cold nights even a few degrees less will do no harm, provided it is not accompanied with too much atmospheric moisture. The only other cultural requirements are to give ample ventilation on all possible occasions winter and summer, and to see that the foliage does not get overrun with insects. Green fly sometimes appears on the flower spikes, but the worst enemy is a small scale that clings very tightly to the foliage and stems. Frequent sponging with clean tepid water is a better plan than using strong insecticides.

Of the dwarfer growing kinds, *S. ampullaceum* is one of the prettiest. It seldom exceeds 9 inches in height, and from the base of the leaves throws up a spike of rosy magenta flowers about 6 inches in height. It lasts well in good condition, and usually flowers about April or May. Though known to botanists many years previously, this was not cultivated in England until about 1837, when Gibson brought it home to the Duke of Devonshire's collection. It is a native of the lower parts of the Khasia Hills and Burmah. Another beautiful Burmese kind is *S. bellinum*, and this is a much more recent introduction, throwing fewer but larger-flowered racemes. The sepals and petals are yellowish green with blotches of brown; the prettily fringed lip is white, with a yellow centre.

S. Blumei, *S. retusum*, and *S. guttatum* are all better known as Saccolabiums, but by botanists generally are referred to Blume's genus *Rhynchostylis*. They are noble plants when well grown, the handsome foliage alone being very ornamental, while the long cylindrical racemes are second to none for beauty. Perhaps the most correct plan is to group them as varieties of one species; but they are quite

distinct, and there are also many sub-varieties, such as the large flowered *Blumei Russelianum* or the rare and valuable *B. Heathi*, a pure white form of *S. Blumei*. The usual colour of the flowers is whitish, more or less spotted with rose.

S. coeleste is also grouped under *Rhynchostylis* by Reichenbach, and is a remarkable and beautiful plant. The name would indicate that the flowers are blue, but this tint is chiefly confined to the tips of the outer segments and the lips, the rest of the flower being white. It is a native of Siam, and its usual flowering season is late summer. *S. curvifolium* is a bright and effective plant when in flower, the colour being a bright red, the racemes being erect and very freely produced. Dr. Wallich discovered this plant many years ago, but only within the last thirty or thirty-five years has it been in cultivation in England. A similar kind is *S. miniatum* (fig. 17, p. 109), introduced from Java by Messrs. Veitch about 1846. It flowers in early spring.

S. giganteum is a very beautiful large growing species now in flower. It is, perhaps, as difficult a kind as any in the genus to cultivate over a long series of years, but for a time after being imported grows and flowers freely enough. It is in flower here now, about half a dozen of the long pendulous racemes filling the house with its delicious aromatic fragrance. Disturbance at the root is distinctly harmful to this kind, and the fact of its flowering at midwinter goes against it. When imported it should be placed in medium-sized baskets or pots, and suspended from the roof. There are several varieties or nearly related kinds, such as *S. violaceum*, *S. violaceum Harrisonianum*, and *S. giganteum illustre*.—H. R. R.

SIMILARITY OF LIFE IN THE VEGETABLE AND ANIMAL KINGDOMS.

(Continued from page 54.)

ELEMENTARY CONSTRUCTION.

THE organic structures of plant life are invariably bounded by curved lines, and have their parts balanced with great symmetry; and, says Dr. Lindley, "in these respects they agree with the animal, and differ from the mineral kingdom." Romé de Lisle, in his observations upon this characteristic in the two kingdoms of life, speaks of it as "resulting from that central power of life which dilates the internal organs in all directions." In both kingdoms is equally noticeable this mysterious effort of Nature to have and to maintain these symmetrical arrangements, and even in those cases which appear to be exceptions to a natural law a closer investigation will reveal the presence of compensating influences.

This is fully admitted, in fact insisted upon by the eminent authority quoted above. This points to some inherent power which is as yet but partly revealed, although Messrs. Chatin and Moquin Tandon have studied it sufficiently to assume, what has not been generally accepted as positively conclusive, "that there are in the vegetable, as in the animal, kingdom both a centripetal and centrifugal force of development" ("Comptes rendus," v. 691). Sufficient proof, however, has been adduced from the observations of various scientists that plants possess a vital force very similar to that found in some species of animals, and further researches by M. Schultz confirm this; for although there is no heart or fixed centre of circulation, as in animals, there are certain foci from which proceed cyclosis, a phenomenon analogous to the motion of the blood in the lower forms of animal life.

In relation to this Cuvier, in treating upon respiration, says:—"No animals respire by a particular organ except such as have a real circulation, and animals which are unprovided with a regular circulating system respire like plants over the whole of their surface." The amount of time necessary to carry these extremely delicate observations to tangible conclusions is well attested by the labours of the celebrated Duhamel, who devoted thirty years to the study of vegetable physiology before publishing the principal results obtained by him. And how few of such results are accepted until others have been to almost as much pains and labour to obtain proofs.

MIMICRY.

In the case of those plants, chiefly, if not wholly, consisting of various members of the Orchid family, accredited with mimicking certain animal forms, more or less imagination is required to complete the resemblance. Selecting the well-known *Oncidium papilio* as an illustration, and which is, perhaps, as good as can be found for the purpose, we cannot, I think, but regard it as one of those coincidences which could not but occur in the vast range of life, hence it appears to me of but little or no importance. Such, however, is not the case where the animal kingdom is the primary factor, for here we find Nature employing a subtlety of design difficult to comprehend. Among some prominent examples to be found is the walking stick insect, *Ceroxylus laceratus*, and Mr. Wallace recounts an instance in which the resemblance was so close to a stick grown over with moss that a native Dyak maintained such to be the case.

It is, apparently, in the functions rather than the forms of life that plants possess the power of mimicry. The barrier may, indeed, be great between the great order of carnivora and the so-called carnivorous plants, but the functions of these plants appear to be quite on a par in the scale of intelligence with some of the lower, not the lowest, forms of animal life. One might even go so far as to say that the Sundews and similar plants exhibiting irritability in such a high degree, coupled with their powers of absorption and assimilation, compare very favourably in this respect with the mollusca or similar orders of beings, which after their infantile migrations settle for life devoid of voluntary motion.

Voluntary motion, the absence of which in the vegetable kingdom is the most important of the missing links, means the possession of

Relative to the functions of life there is one phase which, as previously remarked, appears somewhat startling, and can hardly fail to be of interest and service to the practical worker. Duhamel, Humboldt, and Plenck long suspected that plants possessed the power of voiding deleterious matter, a power common to the animal kingdom. This, in ratio to their more refined functions of food absorption and assimilation, must of necessity be obscure, yet, nevertheless, has far reaching influences. These excretions must not be confounded with the secretions of flower, or leaf, or stem, being quite distinct from them. From the suspicions entertained by the above learned trio Macaire was induced to explore the matter, and obtained sufficient proofs to leave it beyond dispute that "all plants part with a kind of fœcal matter by their roots of a nature varying with species or large

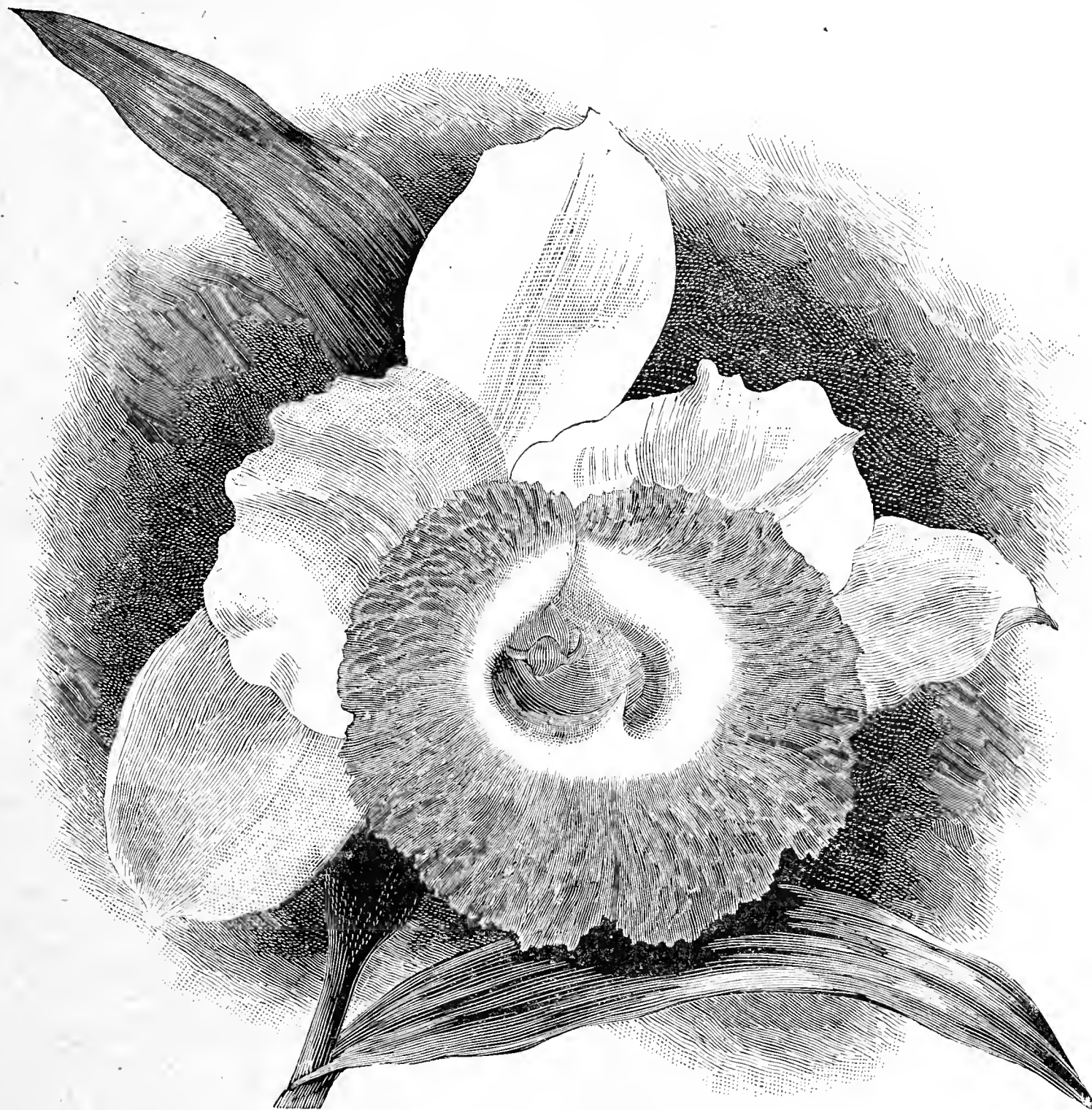


FIG. 16.—SOBRALIA LUCASIANUM.

muscles; but irritability points very strongly to the presence of nerves, which most vegetable physiologists deny, or question the existence of in plant life. In viewing the wonderful structure of the *Nepenthes*, and in considering too the climatic conditions which they love, one might be excused the passing thought that our present species are but the degenerate descendants of a type which, under contemporary conditions producing a flora and fauna now extinct or considerably modified, might even have been a terror to prehistoric man. In the matter of prickles and spines, common to various species of plants, such may be regarded without any wide stretch of imagination, I think, as a means of defence, on parallel lines to those which Nature has provided to many animals; as well as the stinging properties or irritant powers characterising certain subjects of the vegetable kingdom. In the economy of plant life we cannot find that either prickles or spines serve any other purpose, and with the former their brief duration of life, in comparison with the permanent character of the spine, leads to the inference that the protection is especially intended for immature growth.

natural orders." In connection with this may be noted the experiments and observations of Bischoff with spiral vessels, which led to the conclusion endorsed by others that their purpose in the anatomy of plant life is that of preparing the crude fluid for its nourishment and support, "just as blood is rendered fit for that of animals."

The similarity of life in the two kingdoms appears in this respect to be somewhat startling. Food to create the vital fluid, and natural laws in operation to void the deleterious matter. Upon this hinges the necessity of rotation of cropping to prevent that soil-sickness which Dr. Lindley remarks is not due to exhaustion, and that "abundant manuring will not supersede the necessity of the usual rotation." Of the interesting experiments carried out in relation to this subject one more may be noticed—viz., it was ascertained that certain plants, like certain animals, which secrete poisons peculiar to themselves, cannot absorb them into their systems abnormally without injury or death resulting. Thus, *Atropa belladonna* is killed when absorbing its own poison by its roots.—INVICTA.

(To be concluded.)

DIGGING AND TRENCHING.

SPRING v. WINTER.

THAT your respected contributor, Mr. D. Thomson's article (page 49), on the above interesting subject will be widely read cannot for a moment be in doubt; yet it must be read carefully and weighed thoughtfully. Plain and practical though it may appear, let all who have heavy soils to combat digest the matter thoroughly before acting even upon such matured advice from the pen of an acknowledged "expert." We, who are only in our "teens" as compared with the old craftsman, cannot wield the pen with the same powerful influence, the spade being more fitted for us, and we should learn to use that tool at the right season to assist Nature in her wondrous work.

I find in this, as in almost every other occupation, that individuals differ in their methods equally as much as the soils differ in character. My conviction is that no hard and fast rule can be made which will prove practicable to deal effectually with soils, so much depending on the seasons; but intelligent observation as to the character of the soil and season will prove of more value to the worker than any inflexible method. Soils during an exceptional season require exceptional treatment. Should the autumn prove dry, as was the case in 1897, I would recommend those who have strong clayey soil to work, not to hesitate, but seize the opportunity of turning it up whilst in a dry state rather than wait for what may prove a wet spring. I cannot too strongly condemn the practice of digging and trenching ground in midwinter, even though the weather may prove mild. Strong soil, such as I have to deal with, worked when in a wet state, will prove almost unworkable during the following summer.

It is a recognised fact that soil newly dug will retain more moisture than ground which is allowed to remain unbroken. Such being the case, it is difficult to grasp the "principles and laws" which govern the action of frost to penetrate deeper into a firm soil than a loose soil, for this reason, we are taught (and truly) that the drier the soil the higher the temperature, or in other words, that dry soil is always warmer than is wet soil. Therefore this point of frost penetration is somewhat difficult to comprehend from a practical standpoint. My experience with strong clay soil is that when thrown up in a rough state—the rougher the better—at any time when it is in a dry condition in the autumn, not midwinter, the greatest benefit is derived by the influence of frost and air.

Mr. D. Thomson's experience as to the pulverising influence of frost is also somewhat difficult to grasp. I gather from his article that it is a "fallacy" to believe a soil "turned up" in a rough state is pulverised by the action of frost more than is the case with soil unmoved, his experience being that unbroken ground derives the greatest benefit by the action of frost as a pulverising agent. I have no wish to dispute Mr. D. Thomson's ruling, but I ask, How are we to reconcile this with absolute facts in practice which prove the contrary? All have not suitable ground to experiment upon; but here is a case in which almost everyone interested can prove for himself. Take a large ball or lump of strong clay soil or pure clay and place it on the surface of your garden fully exposed to all weather, and then take another ball or lump, of exactly similar nature, and bury it in the soil a foot or even 6 inches deep; leave them in their respective positions until you wish to prepare the ground for the spring crops, and the result will speak for itself. The ball by exposure will be thoroughly pulverised by the action of frost and air, whilst the ball buried will, in all probability, "turn up" in much the same condition as when placed under the soil. This, at least, has been my experience.

I feel quite sure that Mr. D. Thomson will see how difficult it is for the young mind to grasp the full meaning and significance of philosophic teaching when it seems opposed to accomplished facts, but my mind is open for enlightenment.—F. DUNN.

THE MILD WINTER IN YORKSHIRE.

THE extraordinary mildness of the present winter in this neighbourhood up to now, the last day of January, is almost unprecedented. We have scarcely seen a single snowflake, and on two or three occasions only has the thermometer registered as low as 10° of frost, whilst frequently the temperature has been 40° to 45° at night, and 50° to 55° during the day. The effect on vegetation is very marked. Apricot, Peach, and Nectarine buds are swelling fast, nearly ready to open, and Plums and Pears are on the move. In the kitchen garden vegetables are looking as green and growing as if in April. Ellam's Early Cabbage, planted last September, are hearted and ready to cut.

In the famous rockery and alpine grounds of Messrs. James Backhouse and Son there are a great variety of plants in flower, in such profusion as is rarely seen, at least in the North, at this season of the year. Amongst the most noticeable are Aconites, Snowdrops, Anemone blanda, A. appennina, Colchicum crociflorum, Cyclamen coum, Doronicum excelsum, Erica carnea, Geum miniatum, Gentiana acaulis, G. verna, Narcissus minima, Saxifraga Burseriana, Pulmonaria, Rhododendron dauricum, profusely flowered clumps of Helleborus niger, H. caucasicus, H. atrorubens. And very beautiful are Iris histrioides, I. alata, and I. Bakeri, as well as a number of early-flowering shrubs. This seems all very pleasant at the present time, but old gardeners shake their heads and shrug their shoulders, indicating their anticipation of trouble ahead.—R. M., York.



THE N.C.S. AND ITS MANAGEMENT.

"AN ON-LOOKER" (page 38) is about right. Let us have a Secretary who will be the servant and not the master of the Committee, to do what he is authorised and no more. When the annual meeting takes place I trust someone will question the last balance-sheet, and perhaps the coming one too. In spite of the great assistance given the N.C.S. by the Aquarium Company the expenses are very considerable, and they still grow. In justice, it should be understood that the last balance-sheet included the receipts and expenses of the Jubilee Exhibition; but let us peruse it. In 1896 £839 10s. were spent in prizes and medals, a portion of which was met by special prizes given by various persons interested. In addition to this expenditure we have to account for £52 9s. 6d. for medals sent to the affiliated societies, for which the Society received from the said societies the sum of £109, in addition to £67 14s. 6d. as fees.

We must not overlook the fact that these societies received cards, known as "certificates," and also that, being Jubilee year, the sum of £42 was returned to these societies in the form of bronze medals. (There was no such return in 1895, when £167 was obtained from these "greatly assisted" societies, and £57 being charged in the balance-sheet as the value of the medals sent them.) It may be worthy of remark that £42 is a goodly sum to purchase about 128 medals of bronze (6s. 6d. each) and a saving may be effected here perhaps.

The refreshment account is worth a moment's consideration, considering that few, if any, of the exhibitors are ever offered a "bite or sup," as is usually the case with provincial societies who are not "supported" or "assisted" by an Aquarium Company. I abstract these items. "Luncheons to judges, floral and staff, £30 13s." The judges received, as they deserve, £33 12s. in hard cash. Annual dinner, £18 5s. 6d., and banquet £93 11s. I suppose most of the delegates from affiliated societies assisted to increase these items of expenditure, but we find nothing to this effect mentioned.

Then we have "show expenses" £51 3s., I know not what this may cover; "clerical assistance" £75, and also "clerical assistance, members' register, and extra Jubilee work" £7 7s. An item that puzzles me is "commission on obtaining advertisements" £11 5s., which many will consider should come under the head of clerical assistance, and be covered by the charge of £75; but the £11 5s. is for collecting £46 12s., whereas in the previous year 27s. only was charged for collecting £32 18s. 6d. This seems to require explanation. Now we come to advertisements £20 19s., printing £67 19s. 6d., stationery £28 9s. 3d., stamps and telegrams £36 19s., special Jubilee ditto £30.

There are items of £33 15s. to the Royal Aquarium for tickets and £19 commission on Jubilee subscriptions to the same company, and yet Mr. Dean informs the readers of the "Gardeners' Chronicle" that there are 1500 passes carrying "free" admission. Then we come to a charge of £25 for allowance for extra labour, gas, firing, and other items at the Jubilee shows. Are we not being told that the Aquarium supply most of the items free? When we consider that the working expenses of last season (1896) amount to over £700, it is difficult to find where the "great assistance and support" which we are told come from the Royal Aquarium is expended.—QUIS.

[The above letter was crowded out last week. The desirability of appointing a finance committee has been unanimously admitted by the general committee of the N.C.S., and the ratification of its proposition may be expected at the forthcoming general meeting, which will presumably be of an interesting character.]

R.A.C. (NOT N.C.S.) DIVIDENDS.

ACCORDING to the "Westminster Gazette," Mr. Ritchie, who presided last Friday afternoon over the ordinary general meeting of the Royal Aquarium and Summer and Winter Garden Society, Limited, said that "the profit of the past year, £15,998, was the highest that the Company had yet made. The St. Stephen's Hall had been put into satisfactory condition for the FitzSimmons-Corbett fight, and later on, the National Chrysanthemum Society's Show, the Dog Show, and various other shows would be held. During the past six years £60,000 had been paid in dividends, and the reserve had been increased by £20,000."

Have we not here the admission that the N.C.S. is a dividend creative medium, and relied on as a source of income by and for the R.A.C. in the same way as are shows of prize fights and dogs? It seems to be a doggy, sloggy, Mummy combination, and yet the great N.C.S. does not appear to be able to add to its reserve fund more than £5 a year. Is it not awful?

Mr. Ritchie's announcement suggests that his arrangements with the Committee of the N.C.S. for this year have been settled—perhaps a long time before the present agitation commenced, though left to the official head of the Aquarium to make the notification.

There is no knowing the ways of inner circles; and possibly it might not be altogether palatable to the N.C.S. Committee to ask its Secretary to "rush into print" with their decision. Mr. Ritchie is a very clever man. He knows how to make his "show" pay and increase "the reserve by £20,000." He has a capital Secretary, too, to whom the Committee

of the N.C.S. lately made a grant out of its funds equal to the average annual addition to its own reserve!

The N.C.S. shows seem to be placed in the arms of the Aquarium once again. It must all seem mysterious to many more than one—OUTSIDER.

CHRYSANTHEMUMS UP TO DATE.

(Concluded from page 75.)

PASSING to the selection of eighteen new varieties, the voting here gives some peculiar results. No less than 105 names are given, showing how numerous are the introductions of the last two years. It cannot be disputed that the first eighteen on the list are not entitled to their position. Here again the value of "sports" is noteworthy. The first two on the list, G. J. Warren and Lady Hanham, are "sports;" the former, as is generally known, being an offspring of the charming Madame Carnot, the latter from Vivian Morel, both models of what a Japanese Chrysanthemum should be. At least eight of the first eighteen are English raised; this fact is satisfactory, as showing that we are not now so dependent upon chance and our foreign neighbours for the introduction of new varieties as formerly.

In the selection of new ones there are numerous highly coloured varieties which cannot be other than a gain. Royal Standard, Master H. Tucker, Mary Molyneux, J. Chamberlain, J. Bidencope, and Pride of Madford. No less than thirty-eight varieties receive one vote, showing much of individual choice. It very often happens that a variety the first year is not seen outside the locality where it is grown, and although it may be deserving, there has not been time for it to receive the notice to which it may be eventually entitled. Selections such as the present one can only be of varieties which are brought more in view of the public, and in this important respect are "up-to-date."

The selection of incurved varieties reveals many important items.

VOTES FOR THE THIRTY-SIX INCURVED.

30	Empress of India	7	Robert Cannell
30	C. H. Curtis	6	Ernest Cannell
30	Princess of Wales	6	Rena Dula
30	Duchess of Fife	5	Mrs. N. Davis
29	Lord Alcester	5	Golden Nugget
29	Jeanne d'Arc	5	Mons. Desblanc
28	Miss M. A. Haggas	5	Mrs. Robinson King
28	Violet Tomlin	5	Rose Owen
28	Robert Petfield	5	Mrs. F. Hepper
28	Mrs. R. C. Kingston	5	John Salter
28	James Agate	5	Mrs. F. W. Flight
26	Golden Empress	5	John Fulford
26	Queen of England	4	Mons. R. Bahuant
26	John Lambert	4	Leonard Payne
26	Globe d'Or	4	Lyne, jun.
25	Mrs. S. Coleman	4	King of Orange
25	Bonnie Dundee	4	Harold Wells
24	William Tunnington	3	Empress Eugénie
23	Lucy Kendall	3	Yvonne Desblanc
23	Madame Darier	3	Refulgens
22	George Haigh	2	Nil Desperandum
22	Miss Violet Foster	2	Ami Hoste
21	Miss Dorothy Foster	2	J. Pearce
21	Ma Perfection	2	Princess Beatrice
20	Alfred Salter	2	Mrs. Mitchell
19	Baron Hirsch	2	Novelty
18	Brookleigh Gem	2	Miss L. D. Black
18	Mrs. Heale	2	Ideality
18	Major Bonaffon	2	The Egyptian
15	Lord Rosebery	1	Madame Mailfait
14	John Doughty	1	Mrs. D. Airdrie
14	Hero of Stoke Newington	1	General Maurie
14	Mrs. James Murray	1	C. Gibson
14	Lord Wolseley	1	Mrs. Shipman
12	Lady Isabel	1	M. Lemaille
12	C. B. Whitnall	1	King of Yellows
		1	Madame Mistral
		1	Barbara
		1	Noel Pragnell
		1	Lady Hardinge
		1	Miss F. Tomlin
		1	Mrs. James Eadie
		1	Charles Shoesmith
		1	Mont St. Eynard
		1	Triomphe d'Evé
		1	Orange Yellow
		1	Alfred Lyne
		1	Jardin des Plantes
		1	Princess Chas. of Denmark
12	Madame Ferlat		
11	Austin Cannell		
11	Princess of Teck		
11	M. P. Martignac		
10	Miss Phyllis Fowler		
10	Mr. J. Kearn		
10	Prince Alfred		
9	Lady Dorothy		
9	D. B. Crane		
9	Perle Dauphinoise		
9	Mrs. N. Molyneux		
9	Mrs. J. Gardiner		
9	Mdlle. Lucie Faure		

98 varieties.

Ninety-eight are mentioned to select the three dozen required, which gives a wide range of opinion. In spite of the fact that the "Queen" section has been considerably decried during the last two years, no less than six members of this family are found in the premier selection. That ever popular variety, Empress of India, ties with three others for the premier position, Lord Alcester, an ideal type of an incurved Chrysanthemum, being one point below. The position of Duchess of Fife in the list will, no doubt, surprise not a few. By many it is regarded as a Japanese incurved rather than a true Chinese. Amongst the electors there are those who object to C. H. Curtis, thus showing how extreme is the diversity of opinion. That ever popular favourite Princess of Wales occupies the same honourable position it has done for many years. Ma Perfection, too, is another variety that has been the cause of much comment as to its proper place, incurved or Japanese. What are known as the "Teck" family do not occupy an enviable position. The original does not obtain more than eleven votes, which is sufficient to estimate its value as an exhibition flower.

With the exception of Hero of Stoke Newington, Mrs. N. Davis, Lady Dorothy, and C. Gibson, none of the others finds a place, and those named are exceptionally low. The fact cannot be disputed that for the last five years representative blooms have been few and far between. The difficulty experienced in obtaining characteristic flowers, coupled with the comparatively small value of the section from a purely decorative point of view, has, no doubt, done much to drive the family much out of cultivation. Those old favourites, Jardin des Plantes and Barbara, find one supporter each—poor compensation after a working career extending over thirty years in the former instance, and twenty in the latter. Many more interesting comparisons might be made if space admitted; sufficient, however, has been said to show the great change that has taken place in the Japanese section, during the last ten years also the advance in the incurved over twice that period of time.—EDWIN MOLYNEUX.

VOTES FOR THE BEST EIGHTEEN NEW JAPANESE, 1896 AND 1897.

23	G. J. Warren	2	Mrs. Riston
23	Lady Hanham	2	Mrs. G. Carpenter
18	Julia Scaramanga	2	Mrs. A. G. Hubbuck
18	Mrs. J. Lewis	2	Miss Elsie Teichmann
15	Mrs. G. W. Palmer	2	Elthorne Beauty
14	Western King	2	John Seward
13	Mary Molyneux	2	Mons. Hoste
13	Mrs. H. Weeks	2	Beauty of Adelaide
13	Simplicity	2	Beauty of Grenoblois
11	Mrs. W. Mease	2	General Roberts
11	Australie	2	Mons. E. André
11	Royal Standard	2	Mons. E. Rosette
10	Mdlle Laurence Zédé	2	Mons. Chenon de Leché
10	Master H. Tucker	1	Madame J. Bernard
10	N.C.S. Jubilee	2	Snowdon
10	Mrs. F. A. Bevan	1	Mr. A. Calderbank
9	Oceana	1	Sarnian Gem
8	Ella Curtis	1	Maggie Shea
		1	Wilfred H. Godfrey
8	Mrs. Maling Grant	1	Belle Mauve
7	Australian Gold	1	Mons. de la Rocheterie
7	Madame Gustave Henry	1	James Myers
7	Edith Tabor	1	Bynum Scheltzer
7	Georgina Pitcher	1	Madame Ferlat
6	Sunstone	1	Mrs. Barks
6	Modesto	1	Gertrude Salter
6	Lady Ridgway	1	Madame Louis Remy
5	Lady Byron	1	Princess Helene
5	Robert Powell	1	Antoinette
5	Mrs. S. E. Probin	1	Lady Northcote
5	Pride of Exmouth	1	Mdlle. Lucie Faure
5	J. Chamberlain	1	Mrs. H. Chieseman
4	Royal Sovereign	1	Mrs. Magee
4	Joseph Brooks	1	Milano
4	C. W. Richardson	1	Goldfinder
4	Mrs. Hermann Kloss	1	Julian Hillput
4	President Nonin	1	Ialene
4	Baron Ad. de Rothschild	1	Ponderosum
4	John Neville	1	In Memoriam
4	Mons. Hoste	1	Lanavee
4	Emily Silsbury	1	Crown of Gold
3	A. H. Wood	1	Admiral Ito
3	Surpasse Amiral	1	Madame E. Roger
3	Madame G. Bruant	1	Miss Rita Schroeter
3	Duke of Wellington	1	Werther
3	Madame Phillipe Rivoire	1	Phœbus
3	Directeur Fierens	1	Dorothy Seward
3	J. Bidencope	1	Baron Tait
2	Dennis Smith-Rylands	1	Mrs. J. P. Bryce
2	Mrs. R. Jones	1	Comte. Roger de Chezelles
2	Moor Park	1	Swanley Giant
2	Mrs. C. de Keyser	1	Mrs. C. Orchard
2	Pride of Madford		
2	Mrs. C. Birch		

105 varieties.

EQUAL PRIZES FOR PREMIER BLOOMS.

IN reply to the Editor's query, "Were equal prizes ever awarded in the case of the premier bloom in a Chrysanthemum show?" I can state a similar case to that quoted by "W. S., Wilts," as, at our leading district show, in 1893 (which was the first time I competed), a N.C.S. certificate and a cash prize were offered for the best bloom in the show. They were divided between two blooms, my friendly opponent receiving the certificate, and I the cash prize. This division led to much comment at the time. The next year, at the same show, I was more successful, as, with a specimen plant, I secured the cash prize offered, and better still, the coveted "bit of cardboard" of the N.C.S.—FORLORN.

[Not quite "forlorn!" If there had been no money prize with the certificate, the "bit of cardboard" itself would, presumably, have been divided, as it would scarcely do for a N.C.S. certificate to be "tossed for."]

A HANDY CHRYSANTHEMUM MANUAL.

AMONG the books advertised last week by Messrs. Blake & Mackenzie is a good little manual with the comprehensive title, "Modern Chrysanthemum Culture for the Million," by the experienced and successful cultivator, Mr. George Garner. The author says he has endeavoured to give the most important essentials in the cultivation and management of the plants and flowers in as few words as possible, and these so plain that he hopes his methods will be understood. The sixty-four pages evidently contain a narrative of his own practice from what may be described as the beginning to the end of the season of raising, cultivating, and exhibiting Chrysanthemums, or a whole year's routine. This is not done in the form of a stiff calendar, or anything of that kind, but in a series of short clear chapters. The photographic illustrations of cuttings, growths, and buds will be helpful to the inexperienced, who ought soon to be able to grow better blooms than some of those represented in the pages. The most distinct feature of this manual is the tabulated list of sixty good and generally grown Japanese and forty incurved varieties, showing at a glance the colour, height, earliness or otherwise, dates for securing buds of each, the size the blooms ought to be in the size of pots given for growing the plants. These eight pages will be tempting to many who are anxious to obtain such information as they impart. Mr. Garner meets the question of the time for bud-taking given, being suitable all round, in a delightfully easy way, for he says if the buds form later in the north than the south, the northern shows are later too, so all will come right by earlier housing in the colder districts. No doubt northerners will compare his dates for bud-taking with their own, and note agreements or divergencies. No Chrysanthemum grower can err by procuring this manual, and few, we suspect, will begrudge the sixpence. It will prove handy for reference, and afford useful guidance to those novices who would like to know as much about Chrysanthemums as the author does, who seems to tell concisely all he knows about them.

THE CULTURE OF LEEKS.

LEEKs are not so generally cultivated as is desirable, and we doubt if many of those who do grow them have them as satisfactory as they should be, even in that land of Leeks—Wales. In the northern half of this island Leeks are generally grown, alike in the nobleman's many-acred garden and in the cottager's "kail-yaird," and are appreciated alike by peer and peasant. Possibly the difference in the cooking of the two divisions of the country accounts for the different degrees of popularity in which this esculent is held. In the north vegetables are mostly used in soups, and seldom is the Leek otherwise used. "Cocky-leeky" is a favoured dish among the upper classes, but not among these lower in the social scale, and "cocky-leeky" is the only way that we know of whereby Leeks are used simply as a vegetable. In this form the flavour is too strong for ordinary tastes. In soups, even in Leek soup, pure and simple, this strong flavour disappears, and is replaced by one which few northern palates do not appreciate.

If a few necessary rules are observed in its cultivation a crop is certain, even in the least favoured positions. It is like Borecole in this, and bleak indeed must be the spot where neither will grow. For this reason it replaces Onions where climatical causes make the latter a precarious crop. It is also particularly free from insect pests, thriving where Onions are destroyed wholesale by maggots. And then every portion of the plant may be used; so it is an extremely economical vegetable to grow where ground is limited or reasons exist for growing only the most productive crop.

It is of no use attempting to grow fine Leeks on poor soil, for when stunted and starved the crop is scanty and the quality poor. The first thing, then, in the successful cultivation of Leeks is to trench the ground at least two spades deep, and to put a thick layer—the thicker the better—of rich partly decayed manure between the layers of soil, especially under the upmost one. This is for ordinary crops, for these are of the most value. To produce extraordinary crops, to furnish examples for exhibition or other extra purposes, the soil must be trenched, at the very least, 2 feet deep, and very liberally manured. To thoroughly incorporate the manure and the soil, re-trenching may be necessary.

The next point is the preparation of the plants, and various ways are in vogue among those who strive to excel. The common way is to sow the seed in a sheltered position on rich soil about the end of

February or beginning of March, or later if the weather should not be favourable at the time stated. Battering them into soil at once cold and damp will effectually prevent success. The seed, though smaller than Onion seeds, will germinate under the same conditions; but, although all the plants are to be eventually transplanted, care should be taken not to sow too thickly; indeed we are not sure but the best way is to sow in rows 1 foot apart.

In order to forward a few plants hand-glasses or cold frames are sometimes placed over portions of the bed. Deep frames should not be used for this purpose, as the plants are apt to be weakened thereby. The seeds are often sown in cold frames for the same purpose.

To prepare a large number of plants in order to secure extra fine crops, we advise those who are ambitious to excel to make a mild hotbed, and to cover it with a glazed frame about the middle of April. A strong heat is mischievous, and should be avoided. Rich soil should be used and the seeds sown thinly. Air should be given after the plants are up, and care must be taken that they never suffer by want of water. An occasional supply of weak liquid manure should be given, which will forward the plants considerably. If carefully treated they will be strong and fit to put out by the middle of May—a gain of two months, for plants raised in the ordinary way are not fit to put out till July. Two months of summer weather to grow in make a difference in the crop that needs to be seen to be believed. Leeks so raised are always of first-rate quality.

There is yet another way of preparing plants that is practised by exhibitors, by which the large specimens seen at northern shows are grown. About the beginning of February—not sooner, or the plants will be apt to run to seed prematurely—the seed is sown in rich soil in pots and placed in heat. As soon as they show the second leaf, by which time they are forming the second root, the plants are placed in 3-inch pots in very rich soil. When the roots are coiling in these they are shifted into 6-inch pots. They are kept near the light, and occasionally given a little sulphate of ammonia.

By the middle of April they will be fit for hardening. Do this by disposing the pots in a frame into which a foot or so of hot manure has been placed. This will maintain a temperature nearly equal to that to which the plants have been accustomed, and as it cools the Leeks will harden. Then ventilation should be increased for a week or two, when the plants will be ready to put out. Instead of using pots for the plants they may be pricked into boxes, but in transplanting a check will be given, whereas when pots are used no check is given; at the same time we have raised many fine Leeks in this way. Melon pits, Cucumber frames, and other warm structures, too warm for forwarding any other hardy vegetables, will do capitally for Leeks if they can be well exposed to light. A high temperature will ruin Cauliflowers or Celery in a few days, but will benefit the Leeks. Those, therefore, who can neither spare manure to make hotbeds nor afford cold frames for this may utilise any spare room at their disposal.

Do not plant the Leeks among the Celery, and do not plant them in trenches like Celery. Earthing them is a mistake; nobody ever produced good Leeks in that way. Again and again we have been shown Leeks grown on the Celery-trench principle, but they were not satisfactory. The secret lies in obtaining strong plants, put out deeply on well-prepared soil, at a time when ordinary growers are watching theirs coming up.

For ordinary crops there is no better way of planting than the old-fashioned one of making holes with a dibble a few inches deep (that is, down to the layer of manure under the upper spade of soil), and dropping the plants into them singly, but putting in no earth except that which falls in of itself. The hearts of the plants will be much below the surface, but that is just what is wanted, for the hearts will come to the surface, and so the stems will be drawn out to the same length as the hole is deep. We need hardly add that the long blanched stem is most valued, but we warn beginners that the stems can only be lengthened by deep planting. When once the plants have grown strong earthing will not cause the stems to elongate.

The plants in pots must be placed in holes dug with the spade. This digging loosens the soil, which would fall into the centres of the plants and spoil them, but this can be prevented by putting a stiff paper funnel round each plant. In a week or two the stems will be drawn so that the centres will be at the surface, when the funnel may be removed.

Leeks raised in the ordinary way may be planted in rows 14 inches apart, those on a hotbed 2 feet apart in the rows and 1 in the rows, pot plants 2 feet each way. A thick mulching in hot summer weather is of great benefit, and when the soil is fairly well filled with roots a thorough soaking of weak liquid manure will produce surprising growth. Nothing is better than diluted drainings from stables or cowhouses, but sulphate of ammonia is very good.

In preparing the plants for exhibition they should be carefully lifted with all the roots entire, one or two of the outer rinds being removed from the stem, for these are generally yellow, and dirt is almost always seen shining through. Closeness of texture, solidity, purity of white, straightness, uniform thickness, and length of blanched stem, are the points aimed at by those who engage in Leek-growing and exhibiting.

Anyone who finds himself in spring with a number of Leeks running to seed need not conclude he is going to have a great loss. If the seed stems are pinched out the plants will form bulbs at the roots like Onions. These are preferred by many to either Leeks or Onions as a vegetable when stewed tender and served with roast meat.—AN OLD GROWER.

THE MANURIAL VALUE OF SOLUBLE PHENYLE.

THE practical experiences of Mr. W. Iggulden with soluble phenyle are most interesting, and as my remarks on the subject appear to be out of accord with practical results, I would ask your indulgence for a few more words on a subject upon which I was rash enough to embark. It should be understood that I am only interested in the scientific facts at stake, and that I am willing to accept anything if it can be proved experimentally.

First let me remark that the original advice given to your readers was that of using 1 gallon of phenyle in 100 gallons of water. Mr. Iggulden uses apparently a tenth of this strength, and is now about to employ a dose $\frac{1}{20}$ th of the original strength recommended. Surely it is desirable for your readers to be in possession of two facts.

(1) What is the weakest strength required to kill eelworm in infected soil?

(2) What is the strongest dose (a) a Tomato, (b) Cucumber, (c) Cyclamen will stand?

My opinion—and it is only an opinion—is that so dilute an application as 1 gallon in 2000 gallons would not kill anything, much less an eelworm.

That eelworm can be cured by this substance I have no reason to doubt, but I am anxious to know if it can be applied safely at a killing strength. If this be established, soluble phenyle will be a great boon to gardeners.

I am not yet convinced about the manurial benefit. From Mr. Iggulden's statements as to the manuring of his Tomatoes he gave them half a ton of kainit, half a ton of "super," and a ton of soot per acre, besides a liberal supply of dung (40 tons per acre), also frequent doses of nitrate of soda and soot. This manuring is well arranged, and the only item in excess is the kainit, which certainly is in unnecessary proportion. Mr. Iggulden makes ample provision for the largest crop of Tomatoes it is possible to obtain, and, moreover, in the form of the cheap substances any agricultural authority might recommend for the purpose.

We are told that watering these plants with soluble phenyle, 1 gallon in 1000 gallons, "is well worth its cost as a manure alone." The price being 6s. per gallon, we arrive at a cost of £60 per ton for this novel fertiliser. If it be prepared according to the patent specification its manurial value to ordinary people would be 4s. a ton, or a farthing a gallon.

I repeat, I cannot accept this statement and refuse to believe in the "manurial" benefit of soluble phenyle until it is supported by more than the evidence brought forward. To prove such a point as this some standard of reference is necessary. Say, ten plants watered with pure water, compared (by careful weighing of produce and leaf and stem development) with ten plants identically treated in every detail except the watering with phenyle.

I could quote dozens of statements by some of the best gardeners in England about the effect of patent manures to show how fallacious is the plan of growing crops in the richest and best soil, and then applying a particular dressing to the whole extent of the crop without leaving a portion undressed for gauging the effect of the material applied. "The best crop of so-and-so I ever grew received such and such a substance, therefore it is a splendid and effectual material for producing good crops." Let us have some checked experiments on the effect of phenyle, and place the matter beyond the present state of mere opinion in which it rests. We shall then get a clue to the "something wrong."—HALOGEN.

AMPELOPSIS VEITCHI (TRICUSPIDATA).

PROBABLY the most popular and widely grown hardy wall climber is the Japanese Ampelopsis which bears the above name. Its attractiveness of foliage and neat regular habit of growth place it far above any other variety of Ampelopsis for furnishing smooth surfaces, and superior to any deciduous climber grown simply for ornamental foliage. It also has the merit of being easily cultivated in almost any position or aspect. Shady and sunny walls alike seem to suit it when once it has become established, and obtained a good start in moist soil of a fair depth. It is most vigorous and free, making frequently many square feet of growth, which not only covers, but effectually clothes the space furnished annually.

The best time for planting is in mild weather at the present season, though autumn is a suitable time. Good plants may be procured in 5-inch pots, and these are better than larger. Those which will cover a large space at once are difficult to establish on the wall space, as it is important that the growth should at first be secured until the young shoots have extended and put forth their tendrils, furnished with peculiar sucker-like claws, whereby the shoots attach themselves to the surface of stone, brick, or wood. Being so plentifully provided with these suckers is the chief reason why the growths so closely adhere to the smoothest surfaces without constant attention in fastening with nails and shreds. Practically, then, after the first nailing there is little or no trouble in training, and plants may be left to themselves, when they will cover the available space thickly, but gracefully, spreading in all directions.

Ordinary fertile soil, that is moist but well drained, forms a suitable medium for planting. In the preparation of the site deep digging is the best means of bringing the soil into condition. If poor add well-decayed manure, and intermix leaf soil and loam with the surface to further improve it. If of a rather heavy and clayey character, gritty material

and old potting soil prove beneficial in assisting the roots to make a good start. It is desirable that the site should be away from the impoverishing influence of tree roots. It is difficult to establish the Ampelopsis quickly where the roots of large trees abstract moisture from the soil, while the foliage of the same trees may prevent rain reaching the soil in summer.

The positions chiefly selected are at the base of buildings, villa residences, cottages, gable ends, or walls of any height. No climber is better adapted for furnishing lofty walls luxuriantly and drooping gracefully round windows, over porches and doorways in the summer

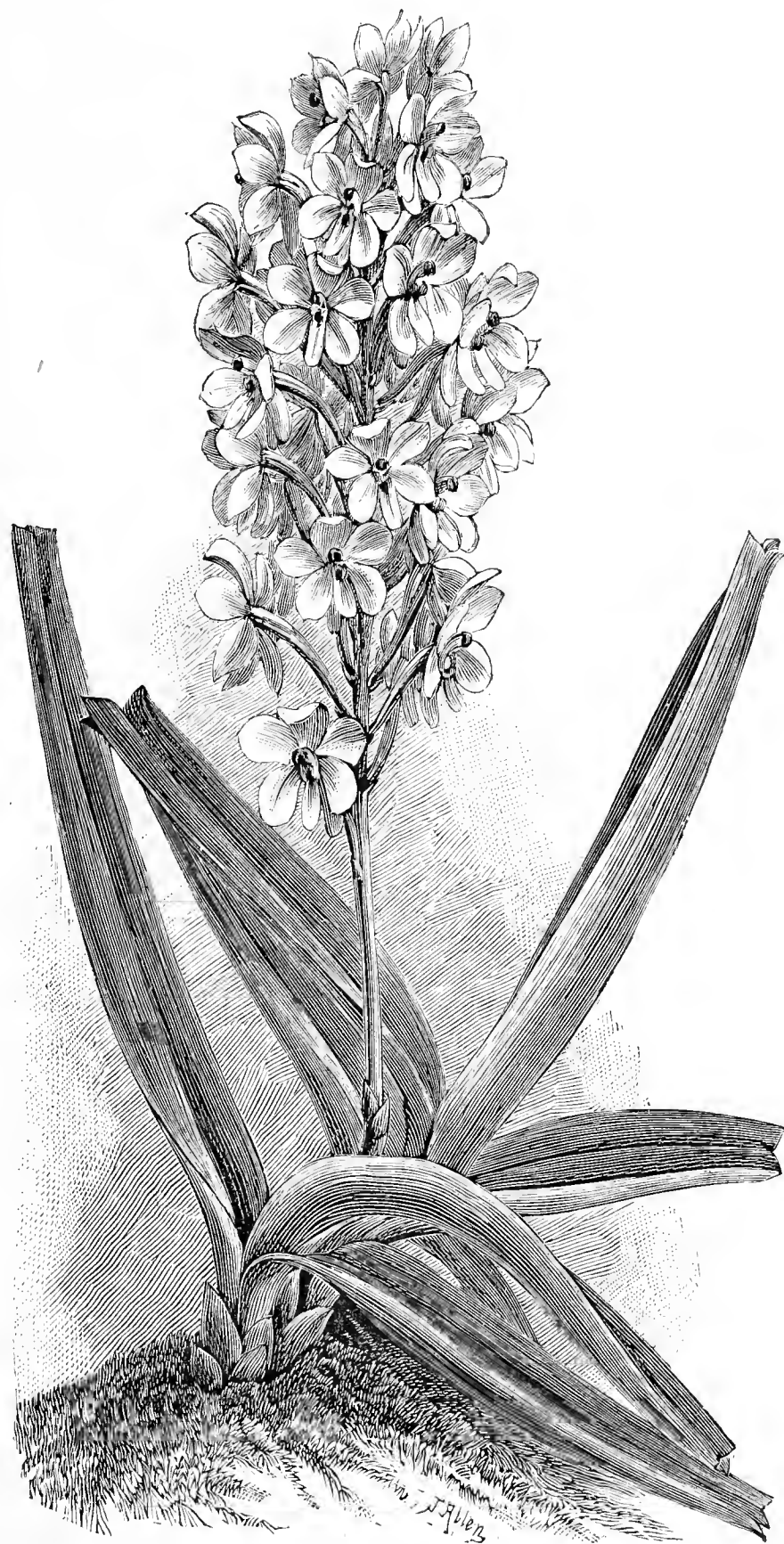


FIG. 17.—SACCOLABIUM MINIATUM. (See page 104.)

months, while in winter the outlines of the slender stems on the walls are no mean ornament.

When planting turn the plants out of the pots, keeping the ball of soil intact with the exception of just loosening some of the matted roots round the bottom and sides. Spread out the loose roots to their full extent, and work among them some fine loamy compost. The rest of the soil may be filled in and made firm. A mulching of manure in a half-decayed condition will keep the soil moist for a considerable time. During the driest weather copious supplies of water may be given to promote growth during the first season, but little assistance ought subsequently to be needed. The roots ramble a long way in search of sustenance.

The vivid colouring of the leaves in the autumn is a characteristic which further recommends this Ampelopsis. Shortly before the leaves fall they assume various tints of colour, beginning with coppery brown, and ending in vivid crimson.—E. D. S.

NOTES ON CAMELLIAS.

So much has been said about this noble flower at one period or other that it requires what is termed "pluck" to approach the subject. Still we must consider the propriety of addressing new readers, as well as of reminding, occasionally, old readers.

Our Camellias are at this time exceedingly fine. We have some 18 inches in circumference; and even *Donckelaeri*, which is not usually a large flower, 15 inches. The plants are covered with buds of enormous size, perhaps scarcely a shoot but is studded, and in another week or so we shall have hundreds out, to all appearance; the foliage, too, of the deepest glossy green. And to what is this attributable? Not to what is termed pot-room, certainly, for we are no great advocates of big pots for Camellias. It is to the use of turfy soil, to the judicious application of liquid manure, and to the preservation of, perhaps, an unusual amount of air-moisture. We also use a very considerable amount of water to the roots, perhaps more than most cultivators; but as the quantity to be used depends so much on the roots, the constitution of the soil, and the drainage, we must again refer to that part of the affair.

It must not be inferred from these remarks that we continue to use, unguardedly, so great an amount of air-moisture when they are in blossom and in the dead of winter. We do use a little constantly, even then, but it is ever accompanied by some degree of ventilation.

The quantity and frequent application of liquid manure which Camellias in a healthy state, rather "pot-bound," and full of bud, will enjoy is amazing; they are a match for Roses, or, indeed, any other plant, in this respect. But we always use it perfectly clear and weak. I really cannot say with precision what the rate of guano per gallon is, but should imagine it is about half an ounce; this will appear a small quantity to some, but then, it must be observed, we seldom use water alone from the time the blossom buds are as large as Peas until they have done making wood. I have never found anything better in this way than good Peruvian. I have tried soot, manure-heap liquor, and soapsuds, but they are rather more difficult of application, and not so certain in the result required. Soot, however, may be used, and with benefit, if necessary; and in that case I should say that two parts soot to one of guano would be good. Soapsuds I have a decided objection to; they not only produce an unsightly appearance, but they are quite at variance with our fundamental principle of high culture by partially closing the pores of the soil, for they always leave a scum or skin behind; otherwise there is no doubt about their possessing manurial qualities. Soapsuds appear to me as fitter for manure heaps, or to apply to growing crops just before a hoeing or other cultural appliance.

But in the use of very fibrous soil, as being so durable in texture, and less likely to derange the drainage, I place very much stress. I have been so particular as to this with mine, that after being chopped roughly I have sifted it, rejecting all the fine soil which came through the sieve, and after drying the lumps have shaken them once more in the sieve, thus leaving a great amount of organic matter in a very porous condition. In the act of repotting these lumps are crammed in tightly as the potting proceeds; but, be it observed, they are in a dryish state, or the tight cramming could not be recommended.

I may here observe that this porous character of material, together with the most secure drainage, have been found particularly requisite, as connected with the liquid manure, the object of which is to sustain annually the greatest amount of the finest blossoms, with the noblest character of foliage. The pots or tubs should be so drained that no sediment can possibly insinuate itself amongst the drainage; and must be also durable in character, according to the size of the shift, inasmuch as the larger the shift the greater is the probability of the tree remaining in the pot or tub.

I have known several cases of such a derangement of drainage as would cause the water, when applied, to stand on the surface of the soil for half an hour after being applied, and unless speedy relief were given, the sure consequences always were, the whole plant becoming pale in the foliage, and accompanied by a kind of vegetable emaciation.

It is amusing to see the speedy and equal passing of moisture through the soil of plants potted on the principles here recommended, as compared with those in which the soil has become soured. The water, applied ever so copiously, disappears in a few seconds, and its mode of vanishing, like the famous dissolving views, is so stealthy, that you seem surprised at beholding naked soil, which was a moment before a sheet of water. To some this may seem making a great deal out of a small matter, and if the principle began and ended with the Camellia, I would confess to it; but I stay for a moment to observe, that so small an affair may point to great matters, as concerns the cultivation of the soil of our broad and fertile acres. Does it not point to the immense importance of organic matter in the soil; as also to the benefits derivable from high cultural processes as to the free and equal transmission of moisture?

But to return: let me remind your readers who desire to shine in winter Camellias of the great importance of early growth. Hurrying them into growth causes such an off-hand development of the parts, such a speedy expenditure of the forces of the tree already stored up, that no after tendency exists for a second growth, to anomalous formations, or to barrenness. The growth completed by about the end of May, a long period remains for the proper formation of the flower bud, and I have always found that the steadier this process proceeds, the bolder and better coloured will be the flower, and the more certain and easy the development of its parts.

During the blossoming period, no vapour should be permitted to condense on the blossoms; their purity and endurance would be much

injured thereby. I have a fine Camellia bush, which last year continued in blossom from the beginning of November until the end of February, or even longer. This shows how long the flowers may be continued on one tree only. The same tree is now in full beauty, bearing a score or two of flowers. I have a small fire night and day, the houses freely ventilated constantly, day and night, and water used liberally, morning and evening, about the floors; but still, through the ventilation, not a drop rests on the blossoms. Let me again recommend those who do not well understand this invaluable winter flower, this bouquet favourite, to shape their practice in this manner.—E. R.

LONDON'S OPEN SPACES.

A GENERAL SURVEY.

It is related that Pitt, afterwards Earl of Chatham, was once asked by Queen Caroline, the Consort of George II., how much it would cost to shut the London parks away from the public, and to convert them into absolutely private property. He replied, "Three crowns, your Majesty." The hint conveyed in these words was understood, and the design was never afterwards entertained, for says another writer of the time, "The people are greatly jealous for the preserving of open places." Yet they knew not London as we know it now, and many of the busiest and most crowded portions of the great metropolis to-day were then open country. In the time of the Second George, for instance, St. John Street Road, with Goswell Road, formed the only outlets practicable for carriages from London to Islington and the Great North Road. The district was full of fields and muddy lanes, and the roads so dangerous that it was customary for travellers approaching London this way to remain all night at the Angel Inn, rather than venture to prosecute their journey after dark at the imminent risk of being robbed by footpads, or falling into some of the filthy quagmires and stagnant ditches that lay in every direction to trap the unwary traveller.

Looking from Holborn Bars the spectator gazed upon a long stretch of country, full of green fields and marshes, and dotted here and there with farmhouses. Yet even then the necessity of breathing-room for London was recognised, and a writer of the day says, "It grows apace, this monster of stone and brick. Every day some fresh encroachment blots out with burnt clay a greater space of country—green has become black, the air is foul with smoke, and if we do not preserve our breathing places from the builder we shall die choked." The necessity of keeping open spaces in the midst of the metropolis was thus early recognised, though dimly, as a sanitary precaution, but the glory of giving London pleasant open places for health and recreation's sake belongs practically to the latter years of the present reign.

The Royal parks in the metropolis, St. James's, Green, Hyde and Regent's parks, the latter of which, by the way, came under public control in 1812, are, of course, amongst the finest of our open spaces, but were found by no means sufficient for the public wants, so public bodies and private benefactors began to inaugurate the magnificent series of parks and playgrounds for the people that are the pride of Londoners to-day, and the majority of which are so admirably kept and governed for them by their representatives on the County Council. In 1887, marking the year of Jubilee, the London Parks and Works Act placed the great spaces of Battersea Park, Kennington Park, Bethnal Green Museum Gardens, Chelsea Embankment, and Victoria Park under municipal control, the immediate authority being vested in the Metropolitan Board of Works, which in turn handed them to its successor, the London County Council. The parishes in which the larger spaces lie are twenty-two in number; Bethnal Green has Victoria Park, 244 acres, and Victoria Park Cemetery, now laid out as a public garden of 11½ acres; Camberwell has Peckham Rye, 112 acres, Dulwich Park, 72 acres, and Myatt's Fields, 14½ acres; Hampstead has Hampstead Heath and Parliament Fields, some 550 acres; Islington rejoices in Finsbury Park, 115 acres, and Highbury Fields, 27½; Kensington has, of course, Kensington Gardens, 275 acres; Lambeth has Brockwell Park, 73 acres, Kennington Park, 19½ acres, and Vauxhall Park, 8 acres; Marylebone has Regent's Park and Primrose Hill, 473 acres; St. Pancras has Waterlow Park, 30 acres; St. George's, Hyde Park 361 acres; Hammer-smith, Wormwood Scrubbs, 193 acres, Old Oak Common, 104 acres, Ravenscourt Park, 32 acres, and Little Scrubbs, 22 acres; Greenwich, Greenwich Park, 185 acres; Hackney, Hackney Marshes, 328½ acres; Stoke Newington, Clissold Park, 53 acres; Lewisham, Blackheath, 267 acres; Rotherhithe, Southwark Park, 63 acres; St. Martin-in-the-Fields, Green Park, 54 acres, and St. James's Park, 93 acres; Clapham, Clapham Common, 220 acres; Tooting, Tooting Graveney and Tooting Bec Commons, 63 and 144 acres respectively; Streatham, Streatham Common, 66 acres; Battersea, Battersea Park, 198 acres; Wandsworth, Wandsworth Common, 183 acres; and Plumstead with Bostall Heath, Bostall Woods, and Plumstead Common, 55, 61, and 100 acres in extent respectively.

These parishes have, in addition to the large open areas quoted, numerous smaller ones, varying from one-quarter to 16 acres in extent, while most of the other London parishes have open spaces of some kind from 100 square yards to 2 acres in extent. These spaces are vested in various authorities, of which the London County Council is by far the most important, controlling, as it does, seventy-nine, representing 3685 acres of the total under all authorities in London parishes; which, leaving out Wimbledon and Putney, whose commons of 1412 acres are under special conservators, amounts to 5449½ acres. In March, 1892, the Council's return of the number of acres it held as open spaces was 2656,

so that it is apparent by the figures previously quoted that no opportunity has been neglected of making acquisitions to satisfy public needs in this direction. The expressed wish of the Chairman of the Council that the natural boundaries of our county should be "a belt of green spaces, providing ample ramparts of fresh air," is one every thinking inhabitant of the metropolis will fervently echo. Such public parks and gardens are all of the utmost value as factors in the making of a healthy community, while, in addition, historical and romantic associations of the greatest interest cling round many of the older ones, concerning the most important of which it will be the province of succeeding papers to treat.—("Lloyd's News.")

THE YOUNG GARDENERS' DOMAIN.

THE PAST, PRESENT, AND FUTURE.

I READ the "Young Gardeners' Domain" with the greatest of pleasure. The writers often make me revert in thought to the time when I was young, when I began to take an interest in the cultivation of the soil, to wish that I could have availed myself with but a tithe of the advantages offered to youths of the present day. Gardeners of seven decades ago were, as a rule, an undivulging people. One might be famous for this, another for that; but rarely would they impart their secrets for others. Oh! it was hard searching work for such as me; for very sparse was the horticultural, or any other periodical literature then. I do not want to sermonise, but now that young men can claim so many advantages in the above respects there must be great hopes for the future, and the benefit ought to be great since editors open their pages and lend an encouraging corner. My incognito of "Upwards and Onwards" took a place in these pages very many years. I now say, "Go on young men after that impulse, both in heart and deed, and then there is no fear for Britons maintaining their forefront position."—ROBERT FENN.

[We place the "oldest contributor" at the head of the young aspirants. All of these have opportunities for self-improvement such as the senior never had, but we fear that few of them are endowed with the spirit of patient plodding perseverance which has enabled him to accomplish so much as the father of our present race of Potatoes (for he was the Columbus) in keeping himself young and making himself happy in his eventide of life. Some young men start bravely—perhaps at too high speed; but if all who halt spend their time as well as one of them, as indicated in the following extract from his letter, we shall be abundantly satisfied.

"I am sorry to say I have not been able to do much writing in the 'Domain' lately, but I have been too busy otherwise, as I am attending various classes, and that necessitates a certain amount of home work. I am attending these classes, for I know they will be greatly to my advantage in after years, for I am determined to let no opportunity pass which affords a good chance of aiding my advancement. In the shorthand classes I am getting on well. I nearly always obtain the highest number of marks for home work, and as there are about thirty in the class, chiefly clerks, this is thought a creditable performance. I have also been busy writing essays, and I intend sending you transcripts of good papers which have been read at our Society's meetings."

That is the right spirit to cultivate, and the tone displayed in the letter will please the octogenarian.]

CHRYSANTHEMUMS FOR LARGE BLOOMS.

THE mild weather of the past few weeks has hastened the rooting of the cuttings, and it is therefore advisable to examine the plants, and all that are rooted through must be removed to a cold frame and kept close to the glass. To insure sturdy growth give a little air on favourable occasions. Some growers put several cuttings round a small-sized pot, and these should be potted singly as soon as rooted, but the better plan is to root them singly in "thumbs," as they thus receive no check in repotting.

A compost found suitable for this first potting comprises equal parts loam and leaf mould with plenty of sand. See that the pots are thoroughly clean and properly crocked; keep the frame closed for a few days, spray them over on fine days, afterwards giving a thorough watering. Air should be carefully given at this time of the year, and it is good practice to fumigate the plants about every three weeks, as prevention of an evil is better than cure.

A few cuttings should be inserted now of those varieties which come too early for the first crown bud and too late for the second, as unless you secure the bud at the right time you cannot get first-class blooms. Though I do not propose to mention varieties, I should like to say a word for Simplicity, a grand white, which requires very careful cultivation. The buds must be taken about the middle of August, as those give the best blooms, while feeding must be very moderate, or the buds may decay when about the size of a nut.—GROWER.

FLOWERING SHRUBS—DESFONTAINIA.

DESFONTAINIA spinosa is a shrub too seldom seen. It somewhat resembles a Holly, and is at times mistaken for one; it is, however, dwarfer in growth than the Ilex, seldom exceeding 4 feet in height or diameter. It is very effective in the shrubbery when the golden yellow flowers glisten among the dark green Holly-like leaves.

The Desfontainia, being a slow grower, is adapted for greenhouse or conservatory decoration, and is one of the best hardy plants I know for that purpose. It comes into bloom during the month of August, and continues about six weeks. The flowers are tubular in shape, about

2 inches long. There is no other species so far as I am aware besides the one named, though there are synonyms. The Desfontainia succeeds in ordinary fertile loamy soil.

For pot culture a compost of two parts loam, one of peat, and half a part each of sand and leaf soil answers admirably. Good drainage is essential, as the plants dislike a stagnant soil, but all the same they require a liberal supply of water during the summer, less sufficing in winter. Repotting may be done either just after flowering or early in spring.

Propagation is effected by cuttings towards the end of August or early in September, inserted singly in small pots in a mixture of sand, leaf soil, and loam in equal quantities. A little heat facilitates the rooting process, but the cuttings will emit roots in a cold frame, if kept close and shaded for a time. They should not be disturbed until April, when the plants may be potted and grown in a frame. Plants thus raised require to be grown for two or three years before they will be fit for planting in the shrubbery, and rather longer before they will make good specimen plants for the greenhouse or conservatory.—EDINBURGH.

[A peculiarity in spelling in this generally well written letter, consisted in the plant resembling a "Holy," as having "Holy"-like leaves. It will be well to abandon the habit before it gets as firmly fixed as in the case of a voluminous writer on gardening for twenty years, who always calls a spade a "spaid."]

CROTONS.

THESE are amongst the most valuable foliage plants we have, both for grouping and table decoration. I think there are few plants look better on the dinner table than some of the fine-leaved varieties, such as angustifolius, Wilsoni, interruptus aurea, and others, with their bright graceful leaves.

A good stock of young plants may soon be obtained by taking the tops off old plants and inserting them in thumb pots filled with soil, consisting of half peat and half loam, finely sifted, and plenty of coarse silver sand; place the pots in the propagating pit, which keep close until the cuttings are rooted, syringing them once or twice a day. Another method of increase is known as the ringing system. Cut through the bark of a shoot, and peel off about an inch just below a joint, and secure round the cut a small handful of moss, with a little fine soil and coarse silver sand. Keep the moss damp, and the shoot will soon root into it, when it may be taken off just below the roots, and put in a pot.

The old plants may then be cut back, and will soon make fine heads again. A suitable compost for potting them is two parts each of peat, good loam, one of leaf soil, and one of silver sand. When the pots are filled with roots liquid manure may be given once or twice a week, with good results, especially weak cow manure or soot water. The temperature of the house should not be allowed to fall below 60° at night, with a rise of 10° on dull days, and allowing a further rise to 85° or 90° with sun heat. Syringe the house and plants well in the morning, and again in the afternoon on bright days, and keep the air moist by damping the floor.—W. W.

BIGNONIA VENUSTA.

THIS is a plant about which one hears very little, and I give the following few notes regarding its culture. It is a greenhouse climber, bearing orange-scarlet flowers, and occupies the roof of a lofty intermediate house facing south-east.

The plant in question is growing in a prepared border 3 feet square. Last year the border was top-dressed, and liquid manure and soot water given throughout the growing season. This year, however, the border will be enlarged when the plant has finished flowering. As the growths were made the strongest were secured to a wire trellis 1 foot from the glass, and the strands wide enough apart to insure the thorough ripening of the wood, which is a very necessary point; for if the main shoots be not properly matured the lateral growths which proceed from them will be sappy, and not flower well. It was for this reason that a south-east aspect was chosen for this specimen.

For the last six weeks the effect of this plant has been grand, and there is every appearance of its continuing to boom for many weeks longer. It hangs down from the roof in long festoons, the clusters of orange-scarlet flowers springing from the axils of the leaves. Propagation may be effected by means of cuttings taken off with a heel and inserted in thumb pots, using a sandy compost and plunging the pots in a moderate hotbed. Those intending to plant, however, would do well to purchase a plant from a good nurseryman in preference to rooting cuttings, planting in a well drained border in a compost the staple of which is good rich loam with some peat and leaf mould added, and enough sand to keep the whole porous.

Bignonias, as a rule, are not subject to attacks from insect pests unless placed in direct contact with infested plants, when they will, as a matter of fact, soon become contaminated. Long sprays are very useful for house decoration, and last a considerable time in water.—T. P.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

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FRUIT FORCING.

Cucumbers.—Young plants are now ready for transferring to the hillocks in the Cucumber house, it having been thoroughly cleaned, and the soil placed in a few days previously to become warmed. Press the soil firmly about each plant, place a stick to each, and secure it to the front wire of the trellis. If bright sunshine occur, shade lightly in the middle of the day to prevent flagging, and after the plants become established it can be discontinued, subjecting the plants to the full influence of the sun. Keep the night temperature at 65°, falling to 60° on cold and rising to 70° on mild nights, and 70° to 75° by day, with 80° to 90° from sun heat, closing early in the afternoon, with plenty of atmospheric moisture on fine days.

Winter Cucumbers, or plants in bearing, will require copious supplies of liquid manure in a tepid state, affording occasional top-dressings of sweetened horse droppings and a sprinkling of soot. The advertised fertilisers are also excellent for top-dressing, supplying a little fresh loam as a rooting medium, an abundance of roots being necessary for imbibing food. Crop lightly, and keep the plants free from insect and fungal pests. Avoid overcrowding; let the foliage have full exposure to light; remove bad leaves and exhausted growths, stopping others one or two joints beyond the fruit as space allows, and maintain a supply of young growths for successional bearing.

Cover manure frames with double mats at night, the linings of the beds being attended to weekly or fortnightly, according to the state of the weather, keeping a supply of stable litter and leaves in readiness for that purpose.

Cherry House.—The Cherry is impatient of fire heat in the early stages of growth, and requires abundance of air. This is an important matter; therefore, commence ventilating at 50°, allowing an increase to 65° with proportionate ventilation, closing the house at 50°, 45° being sufficient by day artificially and 40° at night. The trees advancing slowly from the end of last or beginning of this year are now rapidly unfolding their buds, those previously forced coming into blossom, and will soon need attention in fertilising the flowers on fine days, using a camel's-hair brush, rabbit's tail mounted on a stick, or a bunch of feathers. Where the flowers are not expanded it is well to fumigate the house with tobacco or vapourise with nicotine, so as to make sure that the trees are free from aphides, repeating at intervals of a day or two once or twice. The borders must not be neglected for water, giving a thorough, but not an over supply, as necessary. Trees in pots—a very desirable mode of securing early Cherries—will require more frequent attention.

Melons.—The early raised plants will now be ready for planting out, and require similar treatment to Cucumbers. Excellent Melons are grown in pits, with hot water pipes for top heat, and the bottom heat furnished by fermenting materials. Stable litter and an equal proportion of Beech or Oak leaves should be thrown together about a fortnight before they are required, thoroughly incorporating them, and if dry they should be moistened. In a few days it will be seen whether there is moisture enough to produce fermentation; if so, turn the materials, before violent heat is produced, outside to inside, and damping any dry materials; but if the heat does not generate quickly, the material must be turned after a few days, and receive water as required.

In making hotbeds for frames—still a very desirable means of growing high class Melons—always select a dry site or employ a good layer of faggots for the foundation, taking care to make the bed large enough for the season: 5 feet high at the back and 4 feet in the front, with the material well heated down, will not be too high. Place the frame on the bed, and in four or five days level the surface by adding the requisite quantity of fresh material, and place in the centre of each light about a barrowful of soil in the form of a flattened cone, the top about 1 foot from the glass. When the heat does not exceed 85° to 90° place out a plant in the centre of each mound, pressing the soil firmly around the ball, taking care not to injure the stem, and a little dry soot drawn in a ring round each plant will protect it from slugs.

The day temperature in either houses, pits, or frames should be 70°, 80° to 90° from sun heat, losing no opportunity of admitting a little air, especially in frames, to allow of the escape of rank steam or accumulated moisture, but in no case must the air be admitted so as to lower the temperature below 70°. The night temperature should be 65°, 5° less on cold nights and 5° more when mild weather prevails. Instead of planting out too soon shift into larger pots as required, plunging in a bottom heat of 80°, securing the stems to small stakes, and rubbing off the laterals to the height of the bottom wire of the trellis. Plants for pits and frames should be stopped at the second rough leaf.

Peaches and Nectarines.—*Earliest Forced House.*—The maintenance of a comparatively low night temperature and a steady heat by day are essentials of safe advancement, and attention to fertilising the flowers, especially that of crossing, where there is a deficiency of pollen for securing a good set of fruit. In the case of late varieties still in flower they may have the camel's-hair brush, or other means of distributing the pollen, passed over them, keeping the house moderately dry with a circulation of air until the petals commence fading, when a slight syringing

with tepid soft water will soon bring off the remains of the floral parts. Inside borders are a great advantage in early forcing, the trees always succeeding better than when the roots are in cold outside ones, and the fruit sets better in a lower temperature under those circumstances. Lost time (apparently) can be made up as the days lengthen and brighten; undue haste in early forcing often causes the loss of the crop.

Proceed cautiously with disbudding, also shorten shoots that were left at full length at pruning time if the setting is not good at the points. Remove the foreright shoots first, commencing at the most upright part of the trees, and work down to the horizontal branches at the base. Keep a sharp look out for aphides, and fumigate upon their first appearance. Be careful, however, not to give too much, as the foliage and tender fruit are very susceptible of injury. See that all surfaces near hot-water pipes are kept constantly moist, and that the roots of the trees are well supplied with water or liquid manure in a tepid or weak state. Avoid, however, over-excitement in the early stages of swelling, which is often fatal to stoning. Admit a little air on all favourable occasions, but be careful to avoid cold currents, and close sufficiently early to raise the temperature a little, or maintain a good heat for some time after closing, there not being anything like sun heat, avoiding a close atmosphere by a little ventilation constantly.

Succession Houses.—When the trees are approaching the flowering stage syringing must be discontinued, but secure a genial condition of the atmosphere by damping the house occasionally. In other cases syringe in the morning and afternoon until the flowers commence opening, and in case of a great show of flowers remove those on the under side of the trellis. Do not omit to fumigate on a calm afternoon to destroy aphides that may exist; they hibernate in the eggs and emerge about the time the trees burst into flower and leaf. Brown aphid, however, lives on the young wood through the winter, and patches of it should be treated with tobacco water or other insecticide, sparing no effort to keep the trees free from these pests until the flowering is over; then they can easily be kept under by approved means, not so whilst in flower. If inside borders be dry afford a thorough supply of water or liquid manure in the case of weakness in the trees.

Later Houses.—The mild weather has not made much difference in the trees, they appearing to take what they are always the better for—namely, a period of apparently complete rest. Avoid dryness at the roots, affording thorough supplies of water or liquid manure, not, however, making the soil sodden by needless applications. Where the roof lights have been removed the borders will have been well moistened by the recent rains. Ventilation will be necessary to the fullest extent, so as to keep back the blossoms, and the roof lights should remain off until the flowers are emerging from their scaly covering, and not then safe from frost.

THE KITCHEN GARDEN.

Broad Beans.—When the ground is very cold and wet seed sown before the second week in February is liable to fail. This season, up to the time these hints were penned, the weather has been singularly mild, and the ground, as a rule, is neither so cold nor wet as usual. If, therefore, it is still in a favourable condition, seed may well be got in at once. If extra early crops are desired, and the space can be afforded, sow on a sunny border, previously manured and dug. Rows sown at the same time in the open quarters will only be a few days later. The Early Longpod type crops heavily and ought to be sown now, and with these Beck's Dwarf Green Gem, the best in point of quality.

Early Peas.—The remarks upon early sowing in the case of Beans also apply to early Peas. Only the nearly or quite round-seeded varieties should be sown thus early, as we may yet have severe frosts, snow, and cold rain. If the ground cannot be got into a finely divided state it should be chopped to pieces as much as possible, the two-tined Canterbury hoe proving a good tool for the purpose. Sow the seed rather thickly, allowing for some failures, and cover with 2 inches of fine soil.

Peas without Stakes.—Stakes are not indispensable in gardens, and are rarely used in the open fields. Any dwarf or medium height variety will succeed well in a garden, and under field culture stakes are not required for such tall-growing varieties as Telephone and Duke of Albany. If this plan of growing Peas is adopted the seed should be sown in a single narrow line, much as Broad Beans are sown, and the drills ought to be from 2 feet to 30 inches apart. When sufficiently advanced in growth the rows should be moulded up. Unstaked Peas form the least haulm, but crop early and heavily.

Spinach.—The mild winter has been favourable to the steady growth of autumn-sown Spinach, and may also lead to the plants running to seed earlier than usual. In any case, more seed should be sown in order that there shall be no break in the supply. Between the rows of Peas that are to be staked may be sown single lines of Spinach, one crop not interfering with the other. Clear away weeds, afterwards distributing soot between the rows, and stir it in with a Dutch hoe.

Early Potatoes.—It is yet early to commence planting Potatoes on a large scale, but small breadths on warm borders, also lines at the foot of south walls, may be planted at once—that is, if the state of the weather permits. Select short-topped, early maturing varieties for this early planting, giving the preference to tubers furnished with the first strong sprout only. Medium to light free working soils are best, and the tubers may be planted 8 inches apart in drills 20 inches asunder. Unless the top growth is protected from frosts, first with a ridge of soil, and later with mats, blinds, branches of evergreens, or anything else suitable, the crops will be light.

Sowing Onions.—Raising a few or many plants under glass, duly hardening and planting out, is the surest way of having large well-matured Onions, either for exhibition or for storing. Any of the White Spanish type are suitable for the purpose, giving the preference to the extra fine show sorts if prizes are desired. Sow the seeds thinly in boxes of fine moderately rich soil, and place in gentle heat to germinate. Keep the young plants sturdy by exposing them to light and sunshine, hardening them sufficiently for planting in the open ground early in April.

Large Leeks.—If these are wanted for exhibition in August or September sow seed of a large variety, and treat exactly as advised in the case of Onions. Plants obtained in this way are not liable to run to seed prematurely, whereas autumn-raised plants are given to "bolting."

Early Celery.—Late in January or early in February is a good time to sow seed with a view to having extra early "sticks," but it must be remembered that these plants are liable to bolt in the autumn. Not much seed should therefore be sown now, more reliance being placed on plants raised a month or six weeks later. The white-stalked varieties are the best for present sowing, as these can be blanched ready for use more quickly than the pink or red-stalked sorts. Sow seeds nearly or quite on the surface of pans of fine soil, place in a brisk moist heat, cover with squares of glass, shade heavily, and keep the soil uniformly moist till the seed germinates, when the shading should be removed and the seedlings gradually mured to the light and air. A shelf near to the glass is a good place for them preparatory to pricking out in boxes.



LARGE HIVES.

"A Promise Fulfilled," by "G. H." (page 70) has been a long time coming, and is unsatisfactory to bee-keepers who advocate and use large hives. Before proceeding further on the subject it may be of interest to refer back, with a view to ascertaining what "G. H." has previously said relative to this subject. At first he showed commendable anxiety for the bees, and propounded an exercise in arithmetic as to the number of eggs a queen would lay in a day if provided with a given number of frames. The next was the amount of honey to be obtained; 250 lbs. was to be taken as a surplus, and 100 lbs. left in the hive for stores. In theory this was a great success, but in practice it would not stand the search light being turned on.

In connection with the former he says, "On March 3rd one of our members stated that day he had examined one of his hives which has twelve frames, 18 inches by 9 deep; the bees covered nine frames, and he observed several drones." Referring again to this stock, "G. H." says, "I should think by the end of April or the first week in May the bees will crowd the hive." I then asked him a question which he has not answered—namely, if according to his own showing a queen would lay from 3000 to 4000 eggs per day, what had become of the bees? On March 3rd the bees covered nine frames, whereas by the first week in May they only covered twelve frames.

From the former date to the latter is eight weeks; 3500 eggs laid daily would amount to 196,000. Perhaps "G. H." will inform your readers what had become of the bees from this wonderful colony. Working on the same lines it would take several of his twelve-frame hives to hold the bees from that one stock by the time of the honey flow at the end of June.

In a subsequent note about the 350 lbs. of honey from one hive, "A Border Bee-keeper," who could vouch for the truth of the statement he made, that the above weight of honey "was not taken from a single hive, but was taken off in a week by the owner of an apiary of some twenty hives, who suffered the statement to be spread abroad unchecked;" such are the facts as they have appeared.

LARGE YIELD OF HONEY.

Referring to "G. H.'s" remarks, page 70, he mentions the fact of 334 lbs. of honey being taken from one stock of bees during the past season in the Isle of Man. This has been adverted to in several papers for some months past, and from information received from a neighbouring bee-keeper, who was an eye-witness of what was being done in Mr. Quayle's apiary, and his description of the bee forage in that particular district, I have no doubt the above figures are perfectly correct.

But what was the cause of this record yield? In the first place the colony of bees under notice did not swarm. The weather, that all-important factor in honey production, was more favourable throughout the season than from any other part of the kingdom from which I have received a report. The bee forage was exceptional; and that particular part of the Island must be looked on as a perfect paradise for bees. First came the White Clover, which was in good condition for honey production, not having suffered from the drought as in many parts of the country. Before the White Clover was well over there was a wide expanse of wild herbs, chiefly wild Sage (so it

is called on the Island) in the immediate neighbourhood of the apiary. On this the bees worked freely and stored an abundant surplus. Yet another harvest was in store from the Heather, and when we take into consideration the glorious weather that prevailed the whole of the time, as it was in bloom earlier there than in the northern counties of this country, we cease to wonder how the above large surplus was obtained.

Such a large yield of honey could only be obtained under exceptional circumstances, and shows what may be done under good management when there are three distinct harvests and the weather is favourable. It is not possible for a single colony of bees to store a surplus approaching the above from one source.

STANDARD FRAMES.

The size of the standard frame is 14 by 8½ inches, while "G. H." recommends a frame 20 by 8½ inches. Does he think that a few inches difference in the length of the frame, either one way or the other, makes any material difference in the hands of a practical bee keeper in the amount of honey that is stored? My experience is that it does not. Bees would work as freely and store as good a sample of honey in frames 28 inches in length as they would in those 8 inches or 14 inches less.

But whatever sized frame a bee-keeper starts with, I would strongly advise him to keep to it, as it simplifies matters considerably if all frames are interchangeable. If experiments are to be tried restrict them to a limited number of stocks, and let the bulk of them be of a recognised size. The standard frame is now extensively used throughout the country, and before condemning it in favour of another size, it is as well if we study the question and see where the difference is.

This, I venture to say, "G. H." has not done, as he recommends a hive holding twelve frames 20 by 8½ inches; this he classes a large hive, but which is really much smaller, as I will endeavour to show, than the standard frame hive as advocated in these pages. Many times I have stated the size of the hive I favour—namely, the body hive containing ten standard frames. Another hive the same size placed on the top, which may be termed a super, holding nine frames of the same size. The reason there is one frame less in the super is to allow the frames to be placed wider apart, so that the bees will make deeper cells for storing their honey. Now, nineteen frames, 14 by 8½ inches, gives 4522 inches of surface. Twelve frames, 20 by 8½ inches, gives 4080 of surface, a difference in favour of the former of 442 inches of storage room.

This should convince "G. H." that he doubtless unknowingly has been recommending a smaller hive than the one he condemned. It would have been more satisfactory if he had given the average of the twenty hives experimented on instead of the weight of surplus obtained from one.

If "A Yorkshire Man" should accept his invitation to inspect his apiary next June, he will doubtless have something interesting to give your readers. I do not despair of claiming "G. H." a disciple of the doubling system, and if he will give it a fair trial without bias, he will not be disappointed at the result.—AN ENGLISH BEE-KEEPER.

LARGE FRAMES.

Will George Howdenschire kindly inform one who is just commencing bee-keeping where to obtain the frames he mentions on page 70, 20 inches by 8½, also the size hive he would most recommend? An early reply will oblige, as I am starting on my house to hold six or eight hives, and I may have to alter the dimensions.—WARWICK.

TRADE CATALOGUES RECEIVED.

- S. Bide, Farnham.—*Seeds, Begonias, &c.*
- H. Canrell & Sons, Swanley.—*Chrysanthemums.*
- H. Cannell & Sons, Swanley.—*Seeds and Fruit.*
- J. Cocker & Sons, Aberdeen.—*Seeds and Plants.*
- Daniel Bros., Norwich.—*Seeds.*
- F. Dicks & Co., 66, Deansgate, Manchester.—*Seeds.*
- Dobie & Mason, 22, Oak Street, Manchester.—*Seeds.*
- H. Eckford, Wem, Salop.—*Sweet Peas, &c.*
- R. and J. Farquhar & Co., Boston, Mass.—*Seeds.*
- Fotheringham & King, Dumfries.—*Seeds.*
- W. Fromow & Sons, Chiswick.—*Seeds.*
- J. Green, Dereham.—*Seeds.*
- Laing & Mather, Kelso, N.B.—*Seeds.*
- H. Merryweather, Southwell.—*Seeds and Roses.*
- G. Phippen, Reading.—*Seeds.*
- W. Rumsey, Waltham Cross.—*Seeds.*
- J. Russell, Richmond.—*Roses.*
- J. Sharpe & Son, Bardney, Lincs.—*Seeds.*
- R. Smith & Co., Worcester.—*Seeds.*
- W. Sydenham, Tamworth.—*Pansies and Violets.*
- T. S. Ware, Tottenham.—*Chrysanthemums.*
- Vilmorin, Andrieux et Cie, 4, Quai de la Mégisserie, Paris.—*Seeds.*



All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **8, Rose Hill Road, Wandsworth, S.W.**, and **NOT** to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Superphosphate for Lawns (R. L.).—In the case mentioned, what was regarded as a drastic application was resorted to in the absence of the family for some time. The dressing was equal to 5 ozs. to the square yard, given early in March. Bright dry weather followed, the moss was dried up, the surface left bare and brown for a time, but soon assumed a green hue, resulting in a close sward of fine grass in lieu of the moss departed. A simple, safe, and good lawn and pasture renovator, used by the late Dr. Hogg, consisted of 5 cwt. of superphosphate of lime and 1 cwt. of sulphate of ammonia per acre, applied in February or early March, according to the weather.

Gall (Burr) on Cob-nut Growth (W. P.).—The growth is simply a burr, common in some districts on Hazel, and used by schoolboys for "hockey" games. The origin of these growths, common to Beech and Elm as well as Nut trees, has been attributed to various causes. In the present instance it is fungoid, with the tree in the ascendant in the matter of resistance. We have not seen the "fruit" of the fungus, which is a nectria. Its action is clearly defined in the burr, following the annular layers of wood, and has broken through the bark. Removing the burr (it is not a gall) is the only remedy. The burrs are very interesting as showing alteration of parts due to parasitic influence. Excrecences are also caused by mites and weevils.

Insects on Roots of Orchids, Eucharis, and Ferns (J. L.).—The "insects" are myriapods, distinguished from true insects by there being no clear mark of distinction between thorax and abdomen, composed of many segments, legs numerous, always more than eight, hence readily defined from the spiders. The specimens are very fine examples of the earth snake millipede (*Julus terrestris*), and are general feeders, consuming both decaying and living vegetable substances, and, on a pinch, prey upon slugs, insects and their larvæ, pupæ, and earthworms. In particular, they feed upon Carrots and Potatoes, but various other plants are seriously injured by their attacking the roots, especially those of Orchids, Eucharis, and others of a fleshy character. The best baits are those you have been using—namely, Carrots, Mangolds, Turnips, and Potatoes, and there is no safer means of getting rid of the pests.

Roses Under Glass (Roses).—We presume you are securing the growths to wires a foot or so from the roof of the house. Some of the finest blooms of *Maréchal Niel* that we have seen in the greatest numbers were produced by strong young stems trained about 6 inches apart in the growing season and there left to produce their golden harvest. It does not in the least follow if the growths of your Roses have not been made under the best conditions in the summer that they will bloom satisfactorily in the spring under any particular distances of training now. The most successful growers of *Maréchal Niel* and other climbing Roses under glass cut the stems down to the base of the rafters soon after the flowers are cut, and run up fresh young growths to the top of the house for producing the next season's supply, and so on from year to year. Roses pay the best between October and March if the crops of flowers are good. If you have the back numbers of the *Journal of Horticulture*, on pages 388 and 430, October 21st and November 4th, 1897, you will find useful information. If you do not possess those numbers send 7d. in stamps to the publisher, 12, Mitre Court Chambers, Fleet Street, London, E.C., and ask him to post them to you. For a good little shilling book on Roses in pots write to Mr. William Paul, Waltham Cross, Herts. If you send stamps add 2d. for postage. We do not remember the London publishers. Though it may not contain all you require you may gather from it much that may be of service.

Soil for Vines Infested with Fungus (T. W. M.).—The fungus is the very distinct *Psilocybe* (*Agaricus*) *conofaciens*, readily known by the dark colour of the pileus and stem, both of which are sprinkled with white fibrils. It is inodorous, and not edible. So far as we know it is wholly saprophytic (living on dead matter), and generally springs from rotten straw or the dead parts in or on the soil of gramineous plants. There does not appear to be any reason to suspect it of destroying living roots. We should apply a dressing of air-slaked best chalk lime, using 1½ lb. per square yard, and pointing in lightly. This will tend to reduce the organic matter and convert it into food for the Vines instead of for feeding toadstools.

Rusty Spots on Chrysanthemum Leaves (Joseph Leach).—The leaves are infested by the *Chrysanthemum* leaf-rust fungus (*Uredo chrysanthemi*), which first appeared in this country last year, and has been figured in our columns fig. 57, last vol. You have done quite right in isolating the 300 plants, and instead of using flowers of sulphur you should apply a fungicide containing sulphate of copper, such as anti-blight, lostite, or other advertised kinds, dusting the under side of the leaves most, but also on the upper surface, as there are pustules of the parasite there. The fungus is very malignant in its action, and must be promptly destroyed, it having now reached Yorkshire, and evidently means business. If you prefer a liquid application use sulphide of potassium, ½ oz. to a gallon of water. Act without delay, for the pest passes very rapidly from leaf to leaf and plant to plant.

Gooseberries for Cordons (Worplesdon).—All varieties are not equally suitable for this easy, ornamental, and productive method of producing Gooseberries. As visitors to the meetings of the Royal Horticultural Society know, Messrs. Veitch & Sons have exhibited splendid samples of these cordons densely clothed with fruit. Among the best of these were Clayton, Dan's Mistake, Eskender Bey, Slaughterman, Criterion, Lord Raneliffe, Mount Pleasant, Pretty Boy, Railway, Fearless, Jenny Lind, King of Trumps, Queen of Trumps, Snowball, Bright Venus, Broom Girl, Early Red Hairy, Ironmonger, Red Warrington, and Whitesmith. The last six named are usually regarded as dessert varieties. In the *Journal of Horticulture* of August 19th, 1897 (page 165), an illustration is given of cordon Gooseberries as they appeared three years after planting in Mrs. Chrystie's garden at Bookham. The wire fence to which they are trained is 5 feet high, and for that height the following varieties proved the most satisfactory:—Hepburn's Prizetaker, Green Laurel, Rifeman, May Duke, Whinham's Industry, White Captain, Whitesmith, Red Champagne, Early Sulphur, and Dan's Mistake. Two tall growers, Highlander and Lomas' Victory, did not spur well. Medium growers and free bearers suitable for a trellis 3 or 4 feet high were found in Early Kent, Early Green Hairy, Surprise, Railway, Goblin, Syon, Leveller, Mount Pleasant, Fearless, Bright Venus, and Forester, the six last named being rather shorter than the others. The land was trenched and well enriched. In the summer a mulching of half-decayed manure spread on the soil on the south side of the row, which runs east and west, proved very beneficial. Copious supplies of liquid manure are given when the fruit is green and swelling, and also after it is gathered, to enable the spurs to produce bold fruit buds. This is excellent practice in the case of all fruit trees and bushes which have been more or less exhausted by heavy crops of fruit.

White Jerusalem Artichoke Attacked by Mould (A. B.).—The tubers are quite "eaten up," black and rotten inside, and smothered externally with a dense white mould, amongst which appear here and there black bodies, ranging in size from a pinhead to a pea, and even larger. There are not two funguses, as you suppose, for the mould is simply the densely felted mycelial hyphæ or threads, entirely devoid of fructification, this being commonly suppressed in both the attacks on the Jerusalem Artichoke, Potato, and Tomato, and is unquestionably the worst of all parasites infesting these plants, as its sclerotia (the black bodies) may live in the soil for years before producing the ascophores, which mean danger of infestation over a prolonged period. The black lumps are the resting stage of the fungus, and from these spring, generally in the early summer, small Mushroom-like growths, bearing on their discs the asci or spore cases containing the spores, which in due course are discharged from their apices, and borne by the wind or other agencies over wide areas. The White Jerusalem Artichoke is particularly liable to be attacked by the fungus called (in the mature state) *Sclerotinia sclerotiorum*. We have received a fine specimen from Kent, and now yours from the North Riding of Yorkshire shows the disease or fungus to follow or be introduced with the host. It, however, attacks the old Jerusalem Artichoke, but not to nearly the same extent, the albino form being tenderer than the coloured. The remedy is to burn all the infested plants and not grow Artichokes, Potatoes, or Tomatoes, or even any *Compositæ* member, for it grows on Sunflowers, on the land for some years. The best dressing for the land is quicklime, using 10 tons per acre, 1½ cwt. per rod, just slaking freshly burned best chalk lime so as to cause the lumps to fall into a fine powder for ready distribution, spreading whilst hot, and in the course of a few days pointing in with a fork. To disinfect tubers, use corrosive sublimate, finely powdered, 1 oz. dissolved in a gallon of hot water overnight in a wooden vessel, and dilute to 6½ gallons, letting it stand for five or six hours, stirring two or three times to secure an even solution, then immerse the sets for half an hour. The sets must only be used for planting, as the corrosive sublimate solution is a terrible poison, and must be used with extreme care. We have found this procedure answer, care being taken to select apparently sound sets. We ask you to be very careful with the corrosive sublimate solution, though it will not harm anything but the fungus at the strength named unless taken into the stomach. It corrodes metal vessels.

Cockchafer Grub (C. C. H.).—The specimen sent is the grub of the cockchafer (*Melolontha vulgaris*), that feeds on the roots of various shrubs and trees for about three years, when it becomes pupa, from which it emerges in the spring in perfect form—the familiar May bug or cockchafer. The larva is very destructive of tender roots and partial to vegetable matter, such as that of the decayed parts of manure and the roots of grasses, and the perfect insects feed on a great variety of trees, sometimes wholly denuding Hawthorn, Hazel, Elm, and Willow of foliage. It also attacks Oaks, and a great variety of other trees and shrubs. The grubs are stupefied, if not destroyed, by a dressing of nitrate of soda, $1\frac{3}{4}$ lb. being used per rod, it being best applied after the ground has been dug level, so that the nitrate gets washed into the soil evenly. It is best applied in the late winter or early spring, alike for acting on the grub and benefiting the land as manure. Soot, at the rate of 1 peck per rod, is also distasteful to the grubs and benefits the plants.

Cocoa-nut Fibre as Plunging Material (P. M. C.).—The sample is cocoa-nut fibre from the mat manufacturers, not the dust or fibre refuse commonly used for plunging purposes. We have used it since 1860, and found excellent in most cases. We agree with you in its being superior to either leaves or tan bark as a plunging material for *Amaryllises*, to which water should be supplied very sparingly until the flower scapes show, and then more freely. Danger lies in overwatering. The rooting of the plants from the bottom and over the rims of the pots into the fibre is the secret of fine leafage and a large storage of matter in the bulbs, only the growth must be ripened by judiciously reducing the watering, and eventually drying off completely. *Hippeastrums* so treated far excel those on which foliage has been retained. The ordinary cocoa-nut refuse—the dust or sawdust-like material resulting in separating the fibre from the husk—is, however, the article commonly used for plunging purposes, and quite different from the hair-like fibre which you use in being lighter, and holding less water.

Insects on Celery (B. G.).—The insects are *Collembola* ("spring tails"), but this particular one does not "jump." It is *Lipura fimetaria*, very common in damp earth, and feeds on decaying or even living vegetable matter, such as Carrots, Celery, Potatoes, or other roots; but the animals are rather the consequence than cause of decay, especially in this case, as the real agent that had been at work was the maggot of the Celery-stem fly (*Piophilus apii*). This pest burrows in the Celery leaf stalks, and causes decay. There are some pupæ in the stems as well as maggots, therefore it would be desirable to burn all infested parts, and dress the land with gas lime to kill any pests left in the soil, using 5 stones of the lime per rod, freshly had from gasworks, and leaving it on the surface for a few weeks before turning under. If that be unattainable use kainit, 7 lbs. per rod, after clearing away the crop and levelling or digging, letting the rains wash it in. Spraying with paraffin oil is the best preventive of attack, using very moderately when the plants are established after planting out, repeating occasionally.

Measuring Timber (W. M. G.).—The contents of a tree "can be got by multiplying the quarter girth by the length" by simple multiplication if you go to work properly. You multiply feet by inches, giving as an example "a tree 20 feet long and 6 inches quarter girth, $20 \times 6 = 120$, and you ask what is the 120?" Then you say "no other true way can be given." Please bring the 20 feet into inches, multiply by the 6 inches, and divide by the inches in a cubic foot, then you will find the contents in a woodman-like manner. But the woodman would not go so far about in the case of round numbers. Your next example is even worse: "Suppose a tree to be 36 feet long and the circumference 6 feet. You will take the quarter of 6 feet, which will be 18 inches, and multiply the quarter girth so— $18 \times 18 = 324 \times 36$ feet = 11,664; divide by 12 and $12 = 81$ feet." That shows a strange way of using the multiplication table. Our way would be to multiply the length by the quarter girth, or 36 feet by $1\frac{1}{2}$ foot = 54 feet, or for keeping our school work in exercise, bring the length into inches and multiply by the quarter girth in inches, and then divide by the inches in a cubic foot. This is very desirable exercise for a man that aspires to teach others but who has forgotten what the schoolmaster taught him.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. (D. Williams).—The Pear has been closely examined by several experts, and the majority are of opinion that it is the Spanish Bon Chrétien. It is described in the "Fruit Manual" as an excellent culinary Pear, with a pleasant brisk flavour and musky aroma. Fruit covered with cinnamon coloured russet, and with a lively red cheek next the sun. Tree a vigorous grower and abundant bearer, succeeding well as a standard on

the free stock. (L. O.).—1, Nouvelle Fulvie; 2, Beurré Rance. (J. M.).—1, Scarlet Nonpareil; 2, Boston Russet; 3, Wyken Pippin. (Inquirer).—Winter Franc Real.

COVENT GARDEN MARKET.—FEB. 2ND.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1	6 to 4	Grapes, lb....	1	6 to 2
Cobs ...	21	0 2 6	Lemons, case ...	11	0 14 0
Filberts, 100 lbs. ...	0	0 0 0	St. Michael's Pines, each	2	6 5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0	0 to 0	Mustard and Cress, punnet	0	2 to 0
Beans, $\frac{1}{2}$ sieve ...	0	0 0 0	Onions, bushel ...	3	6 4 0
Beet, Red, doz. ...	1	0 0 0	Parsley, doz. bnchs...	2	0 3 0
Carrots, bunch ...	0	3 0 4	Parsnips, doz. ...	1	0 0 0
Cauliflowers, doz. ...	2	0 3 0	Potatoes, cwt. ...	2	0 4 0
Celery, bundle ...	1	0 6 0	Salsafy, bundle...	1	0 0 0
Coleworts, doz. bnchs.	2	0 4 0	Scorzonera, bundle ...	1	6 0 0
Cucumbers... ..	0	4 0 8	Seakale, basket...	1	6 1 0
Endive, doz. ...	1	3 1 6	Shallots, lb. ...	0	3 0 0
Herbs, bunch ...	0	3 0 0	Spinach, pad ...	0	0 0 0
Leeks, bunch ...	0	2 0 0	Sprouts, $\frac{1}{2}$ sieve ...	1	6 1 9
Lettuce, doz. ...	1	3 0 0	Tomatoes, lb. ...	0	4 0 9
Mushrooms, lb....	0	6 0 8	Turnips, bunch...	0	3 0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36	Ferns, var., doz. ...	4	0 to 18
Aspidistra, doz. ...	18	0 36 0	Ferns, small, 100 ...	4	0 8 0
Aspidistra, specimen ...	5	0 10 6	Ficus elastica, each...	1	0 7 0
Azalea, per doz. ...	30	0 42 0	Foliage plants, var., each	1	0 5 0
Cineraria, per doz. ...	9	0 15 0	Hyacinths, doz. pots ...	8	0 12 0
Cyclamen, per doz. ...	9	0 18 0	Lilium Harrisii, doz....	12	0 18 0
Dracæna, var., doz. ...	12	0 30 0	Lycopodiums, doz. ...	4	0 6 0
Dracæna viridis, doz. ...	9	0 18 0	Marguerite Daisy, doz. ...	6	0 9 0
Erica hyemalis, per doz ...	9	0 15 0	Myrtles, doz. ...	6	0 9 0
„ gracilis, per doz. ...	6	0 9 0	Palms, in var., each...	1	0 15 0
„ various, per doz. ...	8	0 12 0	„ specimens ...	21	0 63 0
Euonymus, var., doz. ...	6	0 18 0	Pelargoniums, scarlet, doz.	4	0 6 0
Evergreens, var., doz. ...	4	0 18 0	Tulips, various, doz. bulbs	0	9 1 6

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2	0 to 4	Mimosa or Acacia, bunch		
Arum Lilies, 12 blooms ...	2	0 3 0	(French) ...	0	9 to 1
Asparagus, Fern, bunch...	1	0 2 6	Narciss, white (French)		
Azalea, dozen sprays ...	0	6 0 9	dozen bunches ...	2	6 5 0
Bouvardias, bunch ...	0	6 0 9	Orchids, var., doz. blooms	1	6 12 0
Carnations, 12 blooms ...	1	0 3 0	Pelargoniums, doz. bnchs.	6	0 9 0
Chrysanthemums, 12 bnchs.	8	0 15 0	Roses (indoor), doz....	0	6 1 0
Daffodils, doz. bunches ...	5	0 9 0	„ Tea, white, dozen ...	1	0 2 0
Eucharis, doz. ...	3	0 5 0	„ Yellow, doz. (Perles)	1	6 4 0
Gardenias, doz....	3	0 6 0	„ Safrano (English), doz.	1	0 2 0
Geranium, scarlet, dozen			„ „ (French) per doz.	1	0 1 6
bunches ...	6	0 9 0	„ „ per 100...	5	0 7 0
Hyacinths (Roman) dozen			„ „ Pink, dozen ...	2	0 3 0
bunches... ..	4	0 8 0	Smilax, bunch ...	1	6 2 0
Lilac (French), bunch ...	3	0 4 0	Snowdrops, 12 bunches ...	0	9 1 6
Lilium longiflorum, 12 blms	4	0 6 0	Tuberose, 12 blooms ...	0	6 0 9
Lily of the Valley, 12sprays	0	9 1 6	Tulips, dozen blooms ...	0	6 1 6
Maidenhair Fern, dozen			Violets, dozen bunches ...	1	6 2 0
bunches... ..	4	0 8 0	„ „ Parme (French),		
Marguerites, doz. bunches	2	0 3 0	bunch ...	3	0 4 0
Mignonette, doz. bnchs...	2	0 4 0			



A MODEL.

(Continued from page 565, last vol.)

THE dairy, if properly managed, should be the most profitable section of the home farm, and for two reasons—firstly, the production of milk and butter of good quality is probably the most remunerative thing in connection with agriculture; secondly, as a large proportion of the produce in this case would be consumed at home the middleman's profit would hardly count, for the surplus would easily find a retail market in the neighbourhood.

The breed of cattle to be kept would greatly depend upon the locality and the soil, but as a rule nothing beats a good milking breed of Shorthorns. If you go in for a pedigree choose the Bates, as they are much the best milkers; and when selecting a bull get one from a milking herd. There are plenty of owners now who make milking properties a speciality, and it is to one of these we must go for a bull

if we wish to keep up a profitable dairy herd. Never mind if he is a bit light in the neck and thighs, the daughters of the next generation are what we must keep in mind, and milk-making properties rather than flesh.

To keep four cows in regular milk, and at the same time to rear calves and keep up the stock, at least eight females must be kept for breeding, and to allow for cases of barrenness even ten might not be too many. In such a case the bull calves would be fed and sold as veal, or the farm would soon be overstocked; the heifer calves would be reared and bred from until found to be barren, or not worth keeping for dairy purposes. We will take ten as the number of cows kept in stock, two and a half years old and upwards, and we will suppose that they produce nine calves—five heifers and four bulls. Four cows will be kept for the dairy, four will be engaged in feeding off the four bull calves and rearing the five heifers, the other two will be resting or filling up gaps. The calves up to six months would not be counted, as they would run with their mothers or foster-mothers; there would be five heifers between six months and eighteen months old, and five between eighteen and thirty months.

There would thus be twenty head of cattle not counting calves, and these would be quite as many as the farm would carry. The heifers should commence to calve at twenty-seven to thirty months; those not in calf at two years old would be fed off at once. Of the five heifers due to calve down annually sometimes two might be barren; but in any case the three would be ample to keep up the milking herd. Heifers not showing good milking promise would be sold, either fat to the butcher or in store condition to the grazier. Those promising well would be kept on, drafts from the cows being sold to make room for them when found desirable. If the cows breed regularly it will be most profitable to sell the older ones just before calving, and if managed as we suggest it will not often be found necessary to retain a cow after the fourth calf; she will then be still in her prime, and make a good price. Cows, like horses, should, except in the case of a very exceptionally good animal, be sold before they begin to show signs of age. A farmer should never have either a mare or a cow over the age of seven.

A properly built and well ventilated dairy would be an absolute necessity, and the same might be said as to the cowhouse. Cleanliness to the end is absolutely essential when dealing with milk, and it is no use to have marble slabs and purity in the dairy if the animals are kept and milked in a reeking filth hole. The summer food of milk cattle is the natural one of grass, with the addition of cotton cake. If the land be good and deep, and not subject to drought, nothing else would be needed; but where the land is dry, and of such we have experience, we find it necessary to grow a few Tares to mow green for the cows when the pasture is running off, and the effect is seen in the diminishing supply of milk. A plentiful supply of pure water must be always available both winter and summer, and there must be no mistake about the animals getting as much of it as they care to drink. A cow will soon run dry if she does not have a sufficient supply of water.

Milk cows should be brought up early into the yard in autumn; warmth is a great point, and people are apt to leave their cows out at grass after sharp frost has warned them that summer is past. They may save a little food for a week or two, but it is more than likely that nothing is really gained, and they had much better take the cow by the horns and house her before her supply of milk has sensibly diminished.

A good thing to use if you wish to dry a cow is Barley straw; therefore we should very strongly advise that Barley straw should be reserved for the cart horses, and that Oat straw should be given to the cows. Hay is considered by many to be the staple food for dairy cattle in winter, but hay is expensive, and though a little in mixture may be, and probably is, a good thing, we should not make hay the sheet anchor.

We would prefer to give chaffed hay and Oat straw in equal parts as a foundation with pulped Carrots or Mangolds mixed amongst it. Dried grains, malt culms, and bran, 2 lbs. per day of each, for each

animal, with 5 lbs. per day of cotton cake, should make a good ration of artificial food. The cake would be best given at milking time in the morning, the grains and bran scalded and given at the corresponding period in the afternoon; the culms if mixed with the pulped roots and chaff would encourage the cows to clear out the manger of those particular foods.

WORK ON THE HOME FARM.

The combined mildness and dryness of the present month are testing the memories of our oldest inhabitants. We suppose there has been such January weather before, for did not Solomon say that there was nothing new under the sun? but no one living appears able to remember such a winter.

We have not yet seen a drill at work, but so many farmers are talking of making a commencement, that with a continuation of present weather, the sowing of Lent corn will no doubt soon be in actual progress. With such a dry tilth, no doubt such is a wise procedure on all soils of more than medium richness and condition; but on light land, or low-lying and badly drained soils, we should advise caution, for we have seen March winds make sad havoc of early Oats and Barley on such land. Spring Wheat, on the contrary, may be sown now onwards until the end of February; but, having had considerable experience with spring Wheat, we should not recommend sowing later than that. White Wheats, such as Hunter's, Stanhope, or Cole Ambrose, are the most successful for February sowing.

Stock generally are doing well, and keeping is now very plentiful. Turnips are, however, beginning to run to seed, and will deteriorate rapidly, unless we have frost to check them.

Laubing has not commenced yet, but the ewes are healthy, abortion very rare, and the outlook of the season is very promising.

A week ago we were busy sorting and delivering Potatoes at satisfactory prices; since then, foreign supplies have put a damper on the trade, and buyers hold aloof. We have not so many left as to make us in the least anxious as to be in a hurry. It is a long cry to midsummer, and the German supplies are, we hear, very limited.

The horses have been well employed working fallows, and one field is so clean and satisfactory that we shall take a crop of Barley instead of Turnips. 3 cwt. of slag and 2 cwt. of kainit per acre will be sown at once, and the seed drilled in March.

The labourers have been kept busy at the fences, which, in another fortnight, will be completed for the season.

METEOROLOGICAL OBSERVATIONS.

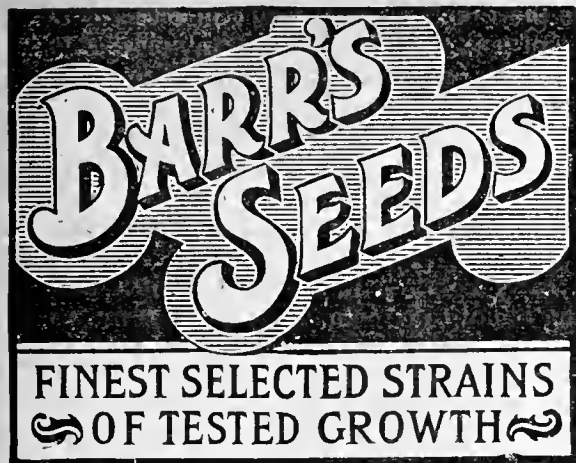
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.
1898. January.	Barometer, at 32°, and at Sea Level	Hygrometer		Direction of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
		Dry.	Wet.			Max.	Min.	In Sun	On Grass	
	inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	inchs.
Sunday 16	30.634	36.3	36.1	E.	41.0	38.7	36.2	40.2	32.2	—
Monday 17	30.487	33.1	33.1	S. W.	40.4	44.4	32.9	46.8	33.5	—
Tuesday 18	30.401	45.4	44.5	S. W.	40.0	52.0	32.8	64.8	31.9	—
Wednesday ... 19	30.357	50.2	48.2	S. W.	41.9	52.2	45.1	55.2	43.0	0.049
Thursday ... 20	30.371	50.9	50.1	W.	43.4	53.2	48.9	55.9	43.9	0.052
Friday 21	30.471	51.7	51.1	W.	45.3	54.4	50.8	63.2	49.1	—
Saturday 22	30.446	49.2	48.2	W.	46.1	54.2	48.6	77.8	44.9	—
	30.451	45.3	44.5		42.6	49.9	42.2	57.7	39.8	0.101
Sunday 23	30.655	35.5	35.2	Calm.	44.6	46.1	34.0	51.9	28.4	—
Monday 24	30.559	44.8	42.4	W.	43.1	46.3	34.1	48.8	31.9	—
Tuesday 25	30.519	43.2	39.9	W.	43.0	44.6	41.6	47.8	39.8	—
Wednesday ... 26	30.423	44.3	41.3	S. W.	42.9	45.9	42.1	48.1	40.1	—
Thursday ... 27	30.461	43.0	40.7	W.	42.8	46.1	41.9	49.9	40.4	—
Friday 28	30.637	41.2	37.9	W.	42.6	43.1	40.9	46.4	39.1	—
Saturday ... 29	30.681	38.7	36.7	W.	42.0	51.2	58.3	52.2	35.6	0.010
	30.562	41.5	39.2		43.0	46.2	39.0	49.3	36.5	0.010

REMARKS.

- 16th.—Overcast and dull throughout.
17th.—Fog almost all day, thick till 10 A.M.; sun visible after, and bright for a little while at 1 P.M.
18th.—Mild and fine, with intervals of bright sunshine.
19th.—Fine, but sunless.
20th.—Damp and rainy almost throughout.
21st.—Very mild; damp and rainy till 10 A.M., fine after, with faint sun from 11 A.M.
22nd.—Bright sun all morning, fair afternoon, and fine night.
Barometric pressure and air temperature very high; rainfall very slight.
23rd.—Dense fog early, and more or less fog almost throughout.
24th.—Fair, but sunless.
25th.—Overcast all day.
26th.—Overcast throughout.
27th.—Fair, but sunless.
28th.—Fair, but sunless.
29th.—Overcast morning, fine after noon, but no sun.
Barometer remarkably high, temperature much above the average, and rainfall extremely small.—G. J. SYMONS.



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LIGHTNING, the best first early round-seeded Pea: pods well filled with good-sized peas of fine flavour; free cropper. Per quart, 1/9.

PRIDE OF THE MARKET, a fine second-early round-seeded Pea; a great cropper, covered with large well-filled pods of deep green peas. Per quart, 2/-.

GRADUS, the best early MARROWFAT; pods large and handsome; peas of rich flavour. Per quart, 3/6.

TELEPHONE, a grand exhibition MARROWFAT, bearing in great abundance long, handsome, broad pods well filled with large peas of delicious flavour. Per quart, 1/6.

DUKE OF ALBANY, a fine main-crop MARROWFAT; large, handsome, and of rich delicate flavour; a grand exhibition Pea. Per quart, 2/6.

NE PLUS ULTRA, SELECTED STOCK; a grand late Pea, unsurpassed for flavour; pods large and abundantly produced; an extra fine stock. Per quart, 1/9.

BARR'S SEED GUIDE contains a Select List of the best Vegetable Seeds and most beautiful Flower Seeds. It is full of Practical Hints, and will be found of great value to Gardeners, Amateurs, and Exhibitors. SENT FREE ON APPLICATION.

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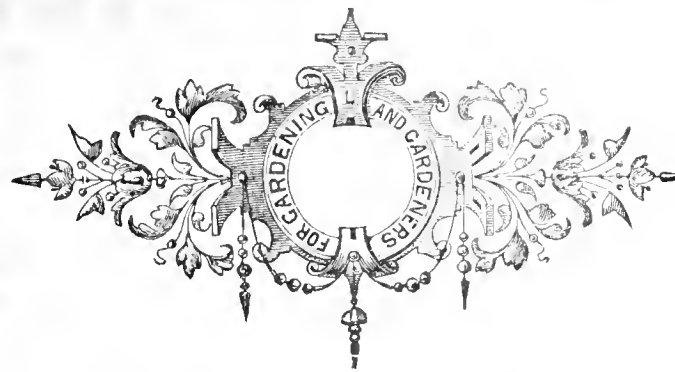
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Journal of Horticulture.

THURSDAY, FEBRUARY 10, 1898.

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CINERARIA AND CELERY PESTS.

THESE have been alluded to by Mr. G. Dyke in his interesting notes on page 56, January 20th. The term "pests" implies more than one, hence the "leaf-miner, or larvæ of the Celery fly (*Tephritis onopordinis*)" must mean something different from that which effects the "mole-like burrowing in the leaves" of Cinerarias.

The Celery fly belongs to the family Tryptetidae of the order Diptera (two-winged flies), and infests (by its small, fleshy, legless white maggots) the leafage of Celery, Parsnip, and other umbelliferous plants, producing at first whitish blisters on the leaflets, afterwards brown in the destroyed parts, greatly disfiguring and sometimes ruining the crops. It may or may not attack Cinerarias, and thus another question arises—namely, identity of species, for I do not know the Celery fly as a pest of Cinerarias, but have plenty of experience with the ruinous Marguerite leaf-blisters fly (*Tephritis artemisæ*), which also sometimes infests the leaves of our autumn Chrysanthemums, and possibly those of Cinerarias. So far as I know its attacks are confined to the Compositæ, and appear the most malignant on Marguerites.

The best preventive of either of the *Tephritis* is to catch the flies by inserting small sticks in the pots just long enough to reach clear of the plants' foliage, some sideways, and some over the plants, and in a slit at the top of each stick introduce a piece of cardboard about the size of an exhibition plant label card, smearing it on both sides with myocum fly gum. This answers at all times under glass, and outdoors in summer for Celery fly, having the traps just clear of the leafage along the trenches, touching up the "rests" every now and then to keep them in working order. Bits of tin answer even better, as they shine, even when covered with a smear made of resin and sweet oil, in equal parts or thereabouts, melted together.

Against attacks of these leaf-blisters flies, soluble petroleum answers well sprayed on the plants, preferably before, or at least on the first faint signs of infection, using the preparation at the rate of a wineglassful to a gallon of water.

No. 2576.—VOL. XCVIII., OLD SERIES.

This prevents the flies depositing eggs in the leaves, or kills the maggots that may be in the blisters, and only needs occasional renewal to prevent or make an end of the pests. Soluble petroleum does not blister the leafage nor injure roots, but kills the pests and rapidly decays in the soil. Raw paraffin oil does harm to foliage and proves injurious to roots.

The caterpillar of the Cineraria leaf-miner moth (*Nepticula argentella*) has the gift of "mole-like burrowing in the leaves," producing a white or yellowish line or mark, sometimes with purplish margins, and goes somewhat roundabout in curves, but always forward from a starting point, ending at the leaf margin, or where the exit takes place for changing into pupa, and from this emerging as a moth. This belongs to the Nepticulidæ (pigmy moths), and has a near relation in the Bramble leaf-miner moth (*Nepticula aurella*). Beyond the white marking on the surface of the leaf the tunnelling does not greatly prejudice the growth, unless it interfere with the veins, then collapse may ensue. The tunnelling, however, is an eyesore that warrants prevention and remedy.

For the leaf-miner moth I know of nothing better than catching it on smeared cardboard, as previously advised. For the caterpillar crushing between the fingers answers well, only do not squeeze too tightly so as to injure the leaf. The almost legless creature is always situated at the forward end of the mine, therefore nip these early, and further mischief will be prevented.

As for attacks of leaf-blisters or leaf-miner moth being influenced by "the constant use of organic manure," I may say that the softer the leafage the easier it falls a prey to its enemy, and the more solidified the foliage the better it resists blister fly and leaf-miner moth in puncturing. The leaf-miner moth has always been the most prevalent with me when the Cinerarias were fed with stable and cowhouse drainings, and the leaf-blisters the most destructive when nitrogenic manure was liberally supplied. Of course, there are so-called inorganic and organic fertilisers, and even stable and cowhouse drainings are a very uncertain article. In another communication I will refer to flued garden walls.—G. ABBEY.

EARLY POTATOES.

To be able to dig a nice dish of Potatoes a few days earlier than their neighbours is one of the little ambitions of a gardener's life. It is not, however, wise to begin to dig until we have a sufficient stock ready to form a successional supply. Warm borders are not too plentiful in many gardens, and as so many crops are required as early as possible, no great amount of such space can be devoted to Potatoes; yet if only a small patch is planted the supply is not large enough to carry us on till the time when Potatoes grown in open quarters are ready for lifting.

The difficulty may, however, generally be overcome by planting tubers of the short-topped varieties in rough pits. Such pits may easily be formed by placing soil in ridges shaped into the form of a range of pits. The ridges need not be more than 2 feet in height at the back and 15 inches in the front. Rough frames made of boards will do almost as well, but they have this drawback, that if we happen to get a severe frost after the Potatoes are up, a great deal of protecting material needs placing round the sides, as well as over the top of the pit to keep out frost, whereas a pit formed with earth sides can be depended upon to keep the Potato tops uninjured, if the top of the frame is well protected. I like to make the soil in these pits thoroughly light and rich, as I find they seldom require water more than once, and a soil in which the young tubers can work freely facilitates their growth. When digging the pits, therefore, work in a large quantity of thoroughly decayed old hotbed manure, mixed with the soil of the hotbed. Although fresh manure should never be largely given to soil in which Potatoes are to be planted, when thoroughly decayed it may with advantage be used. When planting in the limited amount of space afforded by pits, it is necessary to turn it to the best advantage. Short topped varieties such as Sharpe's Victor I plant a foot apart each way, instead of giving a greater distance between the rows, as when they are grown in the open air. In pits, of course, we place soil over the whole surface instead of forming it into ridges, hence the difference in the method of planting.

For planting choose medium-sized tubers, previously prepared by being sprouted in boxes, or started in small pots, not more than two shoots of course being left on them. If planted from pots a trowel should be used for the purpose, but when the tubers have

been simply sprouted in boxes the dibble answers well; in either case cover the tubers with 3 inches of soil. After planting, any old lights at command should be utilised for covering the pit. The only attention required till the sprouts push through the soil is to cover at night, or at other times when the weather is severe, and to remove the covering in bright weather, so that the sun may warm the soil. As growth takes place air must be given on favourable occasions, and 3 or 4 inches of soil placed between the plants when they are about 6 inches in height.

Turning to the culture of early Potatoes in the open air, it is well to note that very early planting is not to be commended, unless means are taken to protect the tops from sudden frosts; but given a warm position in front of a wall facing south, and the necessary attention in regard to protection, tubers fit to dig may be obtained fully a fortnight earlier than from the open ground where they have received no protection. If the present favourable weather continue those who have a warm border should plant a fair breadth during the second week in February, and make another planting two or three weeks later, as by so doing a regular succession can be obtained from the time those in earth pits are dug till those in open quarters are ready. Ground which has been well manured for the previous crop is usually in good condition for Potatoes, without any addition being made, if it is light and in fine working order. In dealing with such a soil I am fully convinced of the advantage of delaying the digging till a day or so before planting takes place; and I also believe that, as a rule, heavy land is greatly benefited by throwing it up roughly in the autumn, so that frost, air, rain, and sunshine may exercise their ameliorating influences upon it. I am aware that there are some very tenacious soils which, if dug in the autumn, are sticky and wet when planting time comes. Such should be left till dry upon the surface, and then be forked over again, for it is the eagerness to get upon autumn-dug land before it is dry in spring that in innumerable instances brings autumn digging into disrepute. Dressing with lime, combined with autumn digging, and the working in of opening materials, will, if persisted in, bring the most stubborn soil into a friable condition. This slight digression will perhaps be pardoned, as it is a matter of great importance, now being discussed in the *Journal of Horticulture*.

In planting early Potatoes in the open air I prefer to set them in drills rather than holes made with the dibber, as the soil around the sets is then left in a condition favourable for the young roots to work in. We have many early short-topped varieties of great merit, these need not be allowed nearly so much space as later ones. From 15 to 18 inches is a good distance to set the rows apart, placing the tubers 10 inches asunder in the rows. As soon as they are an inch above the soil, a sharp look out ought to be kept for frosts; a little soil drawn over the tops answers well for a time, but later on it is necessary to cover with rough straw or similar materials. As the tops are young before being earthed, it is a good plan to fork lightly between the rows, as it allows the warm air to penetrate and thus forward the crop. During showery weather in April a little nitrate of soda scattered between the rows helps to promote rapid growth, as well as to enable the plants to draw largely upon the store of other food present in the soil. When the tops have attained a height of 6 inches earthing should be done, bringing the ridges just up to the tops of the haulm.

Many new varieties have been put upon the market during the last ten years, and some of them have proved decided acquisitions. The one already referred to—Sharpe's Victor—has become a general favourite and is largely grown; but it will, I think, soon be left behind in the race for popularity by a round variety sent out by the same firm—viz., Early Six Weeks. This is, I consider, one of the earliest varieties in commerce, and all should give it a trial. Improved Ashleaf, though not quite so early as some of the newer introductions, has this advantage—viz., that the tubers are always of good quality, even when somewhat undersized, compared with other varieties planted at the same time. It is a pity that Messrs. Sutton & Sons are not able to offer seed of Al this season, as it is one of the good things which everyone is trying to get. Ringleader, sent out by the same firm, is also in the front rank of early sorts. Puritan is a wonderful cropper which produces large tubers, but is scarcely so early as any of those previously named. Dickson's Dwarf-top Ashleaf ripens about the same time as the old Ashleaf, and its dwarf habit of growth is a distinct gain. Britannia, sent out by the same firm, seems to be an exceedingly promising variety. Sutton's Seedling, though scarcely so early as the majority of those named, is good for a succession, and is, I think, the most handsome Potato grown.—H. D.

ROYAL METEOROLOGICAL SOCIETY.—At the ordinary meeting of the Society, to be held at the Institution of Civil Engineers, Great George Street, Westminster, on Wednesday, the 16th inst., at 7.30 p.m., the following papers will be read:—"Report on the Phenological Observations for 1897," by Edward Mawley, F.R.Met.Soc., F.R.H.S. "Monthly and Annual Rainfall in the British Empire, 1877 to 1896," by John Hopkinson, F.R.Met.Soc., Assoc.Inst.C.E.

OPEN AIR CULTURE OF MUSHROOMS.

As a grower of Mushrooms in the open air with more or less success for several years past, a few notes on the subject may be of interest to others who are similarly situated, and who, like the writer, have a difficulty in procuring manure for that purpose. We must acknowledge our indebtedness on many occasions to that admirable book, "Mushrooms for the Million," which is as valuable to-day as when first published, and no one who wishes to excel in the cultivation of Mushrooms, whether indoors or in the open air, should be without a copy. There are, however, many things both in the preparation of the manure and in the management of the beds that cannot be learned from a book. Only practice and close observation will make the cultivator an adept in the outdoor cultivation of this esteemed esculent. This is not at all surprising, as the temperature is an important factor, and when one takes into consideration the rapid changes that take place in this country in a few hours it shows the necessity of always being on the alert.

THE BEST SEASON FOR MAKING THE BEDS.

Spring and early autumn is the most suitable time for a beginner to commence. Beds made up in September invariably answer well, as the mean temperature is about 60°. If the beds are covered with a few inches of litter they will remain a few degrees higher than the above for at least a month after being spawned. The mycelium will then have fermented the whole mass. The nights will become cooler, and the temperature of the beds falls a few degrees lower. This will be an advantage, as when the Mushrooms make their appearance, if a thermometer is placed on the surface of the bed and it registers 55°, the Mushrooms will be thick and of good substance, but if the temperature is too high they will be thin and light. There is no comparison between a fleshy, well-grown Mushroom, and one that has been imperfectly matured either by being grown in too great a heat, or when the temperature has been too low.

MISTAKES IN PREPARING THE MANURE.

There are more mistakes made in the preparation of the manure than many cultivators are aware of. There is, however, this consolation, growers often learn more from a failure than they do from success. We must own to some partial failures which at the time could not be accounted for, and the spawn was blamed, whereas we are now convinced the fault lay with ourselves in the preparation of the manure.

Cultivators should bear in mind the fact that the beds made up during early autumn ought to be very moist; the beds, too, must not be spawned at too high a temperature; 70° is quite high enough. At midwinter the manure should be much drier, and may be spawned at 10° higher.

In preparing the manure we only remove the long litter, as this is valuable for covering the beds, and preferred to clean straw. If the manure has been in a heap for several weeks, it will have heated itself quite dry. The whole mass must then be turned and well shaken out and sprinkled with water. This must be repeated as often as necessary. We usually turn our manure every other day. This is done in the open air, and usually takes about three weeks before it is ready for use.

GROWING MUSHROOMS IN LEAVES.

Owing to a scarcity of manure we have for some time been on the look out for a substitute, and have tried several experiments. Leaves being plentiful, and vast quantities having to be cleared away annually, an attempt was made to utilise them in a more profitable manner than burning or rotting them down for manure for the garden. They thus came readily to hand, and were used in conjunction with manure for growing Mushrooms.

At first only one part leaves to three parts horse manure was used; these proportions proved a great success. Since then we have increased the proportion of leaves, so that at the present time we are making up our last beds for the season with only one part manure to three parts leaves. These beds we have little doubt will, in due course, carry heavy crops of firm, weighty Mushrooms. As showing the bulk of leaves that has been used we may state that upwards of sixty cartloads, the carts having specially made deep boards for that purpose, were used during the past two months. We prefer small leaves for that purpose, such as Beech and Oak, and do not use large leaves as Chestnut and Sycamore. These are prepared in the same manner as manure, but do not require turning so many times.

HOW THE BEDS ARE MADE.

For outdoor cultivation of Mushrooms the ridge system is the best, and no advantage is gained by making them too large. They may be made any length, but 2½ feet wide at the bottom, 2½ feet in height, and 6 inches wide at the top when finished off are suitable dimensions. Beds of this size, if properly managed, will retain sufficient heat to

enable the mycelium to run, and eventually grow a heavy crop of Mushrooms.

With a little practice the men soon become adepts at making the beds. They commence by placing a layer of manure on the bottom a foot in thickness; this being trodden firmly, another layer must be added and treated as before. The sides must be well beaten with the back of a fork as the work progresses, the man using it standing on the ridge, otherwise the sides will not be kept true, and when the whole is finished the outline will be true and regular.

The ridges must then be covered with a few inches of litter, this being important at all seasons. It is advisable to keep the litter clear for a couple of inches from the centre of ridge, as this will allow the steam to escape freely.

SPAWNING THE BEDS.

If the manure has been properly prepared, and the beds made in good order, it will be found that the temperature has declined sufficiently to allow of the beds being spawned on the fourth day. The beds should never be spawned until the maximum heat has been reduced and the heat is falling. A thermometer inserted a couple of inches in the bed will probably rise in a few days to 100° or more; after it has fallen to 80° or less it will be safe to insert the spawn.

A cake of spawn is divided into eight parts, and these inserted evenly over the bed about 9 inches apart, slightly covered with the manure, and not buried more than from 1 to 2 inches in depth. After the bed is spawned it is made firm with the back of a fork. It is impossible to make a ridge too firm; but it is a very simple matter to make it too light, when the produce will not be nearly so satisfactory as when the bed has been properly made.

CASING THE BEDS.

We always case our beds with soil directly they are spawned. Some successful growers delay the casing of their outdoor beds until the spawn has commenced running, but, after trying both plans, we did not derive any benefit by following the latter precedent, so the beds are now finished off at once, and it has the advantage of saving labour, besides preventing the heat from escaping during a spell of cold weather such as is often experienced at this season.

The beds are covered with about 2 inches of good soil placed evenly over the surface of the bed, and if dry moisture is added, otherwise there may be a difficulty in placing it in position. A little practice will soon enable one to do the work well. The ridges are at once covered with litter; if the weather is warm, as it often is in the autumn, a few inches will suffice, whereas a foot or more may be necessary in cold weather. The beds are examined occasionally after being spawned to see that the temperature does not rise too high, as the spawn is easily destroyed in its early stages.

MANURE FOR FUTURE USE.

It is not advisable to make up beds (unless in a very cool place) after the first week in March, as by the time the beds come into bearing warm weather may be expected; the Mushrooms will then be of little use, as they will not develop in a high temperature at that season, decay will set in and they will be useless. Manure from this date onwards may be allowed to accumulate in a heap in the open air. It will become dust dry, but will grow good Mushrooms the following autumn if prepared as above directed.—S., *Yorks*.

DIGGING AND TRENCHING.

SPRING *versus* WINTER.

WHEN I penned the few remarks on this subject it was anticipated that, if noticed at all, it might be exactly as Mr. F. Dunn has treated them on page 106. It is pleasing to have from him so emphatic a corroboration of the facts that I wanted to point out. Mr. Dunn writes—"Strong soil such as I have to deal with worked when in a wet state will prove almost unworkable during the following summer." Also, "It is a recognised fact that soil newly dug will retain more moisture than ground which is allowed to remain unbroken." This is exactly what I wanted to convey, and a stronger argument against winter digging or trenching tenacious soils in a wet locality could not be advanced.

It has been my experience of cropping soils from a tenacious yellow clay to others that well merited the description as being heavy, and in one instance where not unfrequently there has been a rainfall of from 50 inches to nearly 6 feet. Invariably I found that seeding and planting could be accomplished far more satisfactorily when the ground was left in a compressed condition till spring, and the cropping done immediately the ground was turned over, and before it got rain. It will surprise me if there are not many gardeners, and farmers too, that will have had this same experience. A well cropped garden should not have much vacant ground in the autumn.

In reference to the law that governs the relative depths to which

frost finds its way into loose and compressed soil (or, to put it more correctly, the radiation of heat in the case of these two conditions), I do not think for a moment that Mr. Dunn would use any body of a solid or compressed character in preference to an open or porous one to prevent the radiation of heat from pits or frames. Neither in a frosty night would he put on a closely woven linen garment in preference to an Irish frieze to prevent the heat leaving his body. The very same law that determines these cases determines the depth to which frost penetrates the earth. The reason why an iron bar conducts heat more rapidly than a wooden one is the same as conducts the heat more rapidly out of solid soil, and lets frost or cold into it, than takes place in loose soil. And you may as well try to alter the law that makes a man stoop when climbing a steep road, and compels him to stand at anything but a right angle from the surface of the incline.

As I have already remarked, the well recognised circumstance that, to prevent the summer sun from sending its heat down into the ground, causing the more rapid evaporation of moisture from the roots of crops, the proper thing to do is to keep the surface constantly in a loose porous state; either this, or to mulch with some loose manure or litter. If the surface be left in a caked or compressed condition you have a medium fitted by natural law to convey the moisture far more rapidly out of the ground, and, moreover, exclude the air from exerting its food-preparing power in the soil. It is impossible to reverse this law's action, and it accounts for what I have over and over again found, the fact that compressed soil radiates the heat out of the ground in winter just as it conducts the heat of the sun into the ground in summer. Mr. Dunn's reference to a piece or lump of soil lying on the surface of the ground and one buried a foot deep in it proves nothing for or against the depth to which frost penetrates under the two conditions in question. It seems to me to point to a mere surface pulverisation.

It might be further remarked that the amount of air in a soil has much to do with the penetration of frost. The more air the more frost-resisting power, hence it is found that a comparatively thin covering of earth keeps the frost out of our Potato pits, provided there is laid carefully next to the Potatoes a layer of straw, with its hollow tubes or stems full of air. This same holds good in the keeping of frost out of glass pits or frames. Lay the mats, or whatever the covering may be, closely on the glass, and the heat radiates far more quickly than if kept an inch or two off the glass, leaving a vacuum for a stratum of air. I have seen damage done to cold water pipes in a hard gravel walk, while not one was broken or burst by frost in the same depth of loose garden soil. For the same reason a wooden shanty is warmer in winter and cooler in summer than one of sheet iron; but the illustration of the working of this law is endless, and no power of man can alter it.—D. THOMSON.

THE PHILOSOPHER IN THE TRENCH.

In the trench? Why, yes! and if you will believe me, prostrate there. But we all respect the philosopher so much that we would fain see him on his feet again. If it be thought that sentence No. 1 here indicates too great a complacency, then perhaps the compliment in No. 2 will balance matters, because Complacency and Compliments have gone together since the world began, and the discreet pages of our Journal give them all the respect which is due to their venerable character.

The beginning of wisdom is often the ending of philosophy. The latter is one of those cheerful things which do useful fair-weather duty, but come to grief under stress of circumstance. As a phrase it has many merits. It possesses resonance and sonority. It bespeaks dignity. When a controversialist lays hands on it common weapons are of little avail. It possesses certain awe-inspiring qualities, so that timid persons are rather afraid to take too close stock of it lest it should go off. When, however, courage is screwed up to the sticking point and examination takes place a flaw is sometimes revealed.

But if philosophy is formidable in itself alone, what are we to think of it in the hands of a past master in the art of gardening like Mr. D. Thomson? Doubt then becomes almost treasonable, as leagued with Presumption. This is a combination so formidable as to give pause to any critic who does not enjoy the twin distinction of professional eminence and ripe years. So he hesitates. It is not, you understand, a thwack from the philosophic flail which he fears so much as the keener barb of seeming disrespect. The new idea likes to assert itself, yet claims the saving grace of modesty. There is but one way out of the dilemma, and that is to remember that conscious strength feels pleasure rather than anger in perceiving that youth is trying to feel its devious way to wisdom.

I read the article of Mr. Thomson with so much interest that when I had finished it I read it again. It was that lurking philosophy which tempted me. I feared it, but still it lured me on. Mr. Thomson's philosophy is that winter digging and trenching is not so good as spring work. Not a very startling thesis, you will say;

indeed, rather an old friend, but put forward so weightily and with so much brainful resource behind it as to almost command the attention of something entirely new. Like a wise general our venerable teacher throws up two lines of entrenchments, one of which consists of philosophic deduction, the other of practical example. On reflection it seems to me that only the latter of these is of much defensive value; as for the other, why it confounds its own designer, and instead of leaving him triumphant on the edge of the trench throws him prostrate in it.

"A loose porous body of material holds more water than one that is solid and compact." The assertion is Mr. Thomson's, and it is indubitably correct. He bases his argument upon it, but goes, as it seems to me, astray in his deductions. It is because of the fact herewith stated that the grand old gardener would leave stiff soil alone till the spring; it is because of the self-same fact that I would attack it in winter. Mr. Thomson goes to natural philosophy for his deductions, and I will follow him there. Is it not a fact that water at freezing point expands? Undoubtedly; what then? Why this, that the greater the amount of moisture within the soil the greater must be the disintegrating action of frost. Natural laws, says Mr. Thomson, are inexorable; but when he goes on to say that "they act powerfully in producing results that tell against the recommendation of the winter tillage of heavy soils in wet districts" I beg respectfully to suggest that he has allowed himself to be misled.

All our excellent friend's arguments, all his "philosophy," would come out right side up if there were no such thing as winter frost; with it they are turned topsy-turvy. Take a piece of strong adhesive clay, such as most horticulturists, old and young, have had to deal with some time or other in their lives (not less often, perhaps, because they are not for ever crying their practical experience from the housetops). The thoughtless man will worry this soil about at much expense of manual labour; the wiser one will let Nature do it for him. Throw it up in December, and what happens? In nine seasons out of ten it gets well saturated with the rains of early winter, taking up, as Mr. Thomson truly tells us, more water than if left packed. The greater amount which it holds the greater will be the natural crumbling or disintegration from the action of the following frosts, which rarely fail to do their work. Note that I say "December" digging. It is an important stipulation. I have seen stiff land dug early in November, and the surface became greasy from the long delay of frost action. This surface grease clogs the soil, excludes the air, and to a certain extent the frost. Perhaps I should not be very wide of the mark if I suggested that Mr. Thomson has observed this soil paste, and been driven by it to the other extreme—spring digging.

But if, as I contend is the case from the law he himself proclaims, winter digging is theoretically sound, it is not less so practically. I should be surprised if hundreds of instances of its benefits could not be quoted. Staggered by the weight of Mr. Thomson's name, not a few worthy workers may doubt the evidence of their own experience, but when they have had time for calm reflection and a quiet look round they will view the matter as I do. I venture to refer to one instance as a set-off to the case quoted by Mr. Thomson.

A particularly vicious example of the London clay in a Kentish suburb had for years set at defiance the hopes of the master, who had been assured by his landscape gardener that if scientifically drained the clay would give abundant crops. Somehow, though, it did nothing of the kind. There was no doubt about the systematic (and expensive) character of the drainage; there was equally none about the poorness of the crops. Then came along an adviser of another sort—one with a very qualified belief in drain-pipes, but a heartily unqualified one in garden forks well wielded—myself. Examination elicited the interesting fact that 3 feet of solid, sour, sticky clay rested on those immaculate drains. It was followed by a prompt inquiry and a prompt answer: "May I do as I think best?" "Yes; go ahead!" Within twenty-four hours a small army of diggers, fork-armed, were at the clay. By mid-December the last rod was ridged. There was rain, there was frost, and, hey, presto! a transformation scene, all brought about by Mother Nature. Crumbly soil instead of sticky lumps, changed in character by frost, greeted eye and hand. By the time Mr. Thomson would have commenced his digging the garden was in kindly working order—the master staring, the scientific drainer rubbing his nose.

If he saw anything that was a lesson to him, and set him thinking, let others follow his example. And now I think of it, I will quakingly rub mine own, in anticipation of Mr. Thomson's return blow.—W. PEA.

EARLY FLOWERS IN SCOTLAND.—I imagine it must be very unusual to see the Hepaticas flower before the Winter Aconite and Snowdrops. May I ask if it is so? Until this season I have no recollection of having noticed this. *Hepatica angulosa* flowered ten days, and the single Pink—blue, white, and double red—a few days before the plants mentioned. If this is the reverse of the usual order, it must, I presume, be due in some way to the very exceptional nature of the season.—SELKIRKSHIRE.

MORE ABOUT SOLUBLE PHENYLE.

How now, "Mr. Editor." There is evidently "something wrong somewhere;" but I think that mysterious something is about solved. Mr. Iggulden is, I believe, a man who practises what he preaches. What does he tell us on page 76? Firstly, that if phenyle be used at the rate of 1 gallon in 1000 gallons of water it will injure foliage, and may be injurious to tender root fibres; and secondly, that he has decided that 1 gallon of phenyle is enough for 2000 gallons of water, and this is the strength it will be used for Tomatoes and Cucumbers this season. I thought perhaps he had made some mistake in his figures, so left my notes over for a week to see if my supposition was right. As no alteration appeared last week, I think we may now take them as correct.

I am under the impression that soluble phenyle has been recommended to be used at the rate of 1 gallon in 96 gallons of water. This was the advice my friends followed, and killed their plants. Now, if Mr. Iggulden thinks 1 gallon of phenyle in 1000 gallons of water will injure tender root fibres, what would be the result of using it ten times stronger? and can anyone wonder at Cucumber plants being killed by using this strong medicine?

I cannot agree with your correspondent as to the manurial value of soluble phenyle. I still think it of no practical value as a fertiliser; but as a little practice with it may clear away these doubts, I will give it a trial before I say anything more on the subject.—W. DYKE.

[An important question remains unanswered. Is the soluble phenyle that some persons find safe and others dangerous to use of uniform quality and strength? We think Mr. Abbey has sent us Tomato roots which have been immersed in the proportions he named, and they were not injured in the least, as could be clearly seen under a powerful microscope. Still, when a weak solution of anything answers, it would be foolish to use a strong one.]

PHRYNIUM VARIEGATUM.

FOR decorative purposes few ornamental foliage plants are more useful than *Phrynium variegatum* (fig. 18). When well grown this plant forms an attractive feature in the stove, and it is also admirably adapted for table decoration. The character of this *Phrynium* is so well depicted in the illustration that a detailed description is unnecessary. It usually grows from a foot to 18 inches in height, and the foliage is prettily marked with deep green. In most cases it is grown in a stove, but an intermediate temperature suits it, and if cultivated under the latter conditions it is hardier and more suitable for the embellishment of warm apartments. We trust this will meet "Decorator's" wishes.

APRICOTS.

THE exhaustive manner in which Mr. Abbey treated the subject of Apricots and their culture would seem to have covered all the controversial ground. The Apricot, however, is so universally accepted as an uncertain and fast becoming an unprofitable crop, that the experience and opinions of others I am sure would form an interesting subject to many Journal readers. That the Apricot has got into bad repute no one can deny, for in so many gardens one hears the same record of partial or total failure through gumming and the sudden collapse of branches, of which Mr. Abbey speaks. In a few gardens they give little trouble—no more, in fact, than Plums, Apples, or Pears.

In his second paragraph (page 31) Mr. Abbey says, "The chief reason of failure in this country is, according to my experience, restriction, the trees never succeeding on low walls, and mentions that on a 10-foot wall he once had a collection of the choicest varieties that in three years dwindled into an unprofitable state, with one exception. Presumably Mr. Abbey would consider 10 feet a low wall, but 2 feet more than this, I think, would cover the height of the majority of garden walls, and there are a few instances where Apricots flourish for many years restricted to this space, while in others, as in Mr. Abbey's case, premature decadence sets in even before they have filled their allotted space. There must be other contributory causes than the limit of space to account for failure, of which there are so many recorded. Natural shelter, soil, drainage, and the stocks on which they are worked account for a good deal, favourably or otherwise. If this is not so, what explanation can be given for trees doing so well in one and so badly in another garden, when root and branch treatment is made a study of by those in charge? I know of trees that are over sixty years of age as healthy and fruitful as anyone could wish, and yet these had obviously filled their spaces years ago, and had no means for farther extension. Here the loss of branches is almost unknown.

Evidently Mr. Abbey is not in sympathy with elaborately prepared borders such as one sometimes hears of as being necessary, for he says, "If well drained, almost any garden soil will grow Apricots to perfection." I have noticed in some cases that where the garden slopes gently or sharply to the south, and there is a belt of trees on the north and north-east sides, Apricots doing better than in other gardens strictly level and without the natural shelter named. Here there was once a wall of more than 100 yards in length devoted to these fruits, which, as in Mr. Abbey's case, was a source of trouble, constant replanting and subsequent dwindling even of young trees. This brought about a resolution with my predecessor to plant no more Apricots, but as they were removed their

places were filled with Pears. There are just a few of the trees still remaining which will not eke out a very long existence; but like the rest, give place to other kinds of fruits. One, however, a standard-trained, seemed to have survived a good many, and there was an absence of the branch decay so common in the dwarf trees.

This, to me, gave rise to the thought that the stock used for standards may be better adapted to our soil than the one employed for dwarf-trained trees: and instead of abandoning Apricot culture as hopeless, I have put in some standards against another south wall in order that I may get some proof of the greater adaptability of the one over the other. So far the evidence is in their favour, but no definite opinions can be formed for some time to come.

I incline to the opinion that in the case of newly planted trees, a frequent and careful digging about their roots, severing any tending



FIG. 18.—PHRYNIUM VARIEGATUM.

towards grossness, and incorporating with the soil in the course of filling in, lime grit, road scrapings—where limestone is used in repairs—leaf mould, and burnt refuse; and although the walls may not be so quickly furnished the trees would be better equipped in having abundant root fibres instead of those of a thong-like description, which usually come from deep and unrestrained growth. To make special borders of turfy maiden soil would be to court failure in gardens so closely associated with gumming, and branch-dying, unless there were a greater depth of wall than is usual in gardens to furnish with the corresponding freedom of growth, which, as Mr. Abbey advises, is better laid in than cut away, so long as undue crowding is avoided.

Of varieties, Henskerk is the best here; this gives large fruit, good in colour and quality, ripening about the middle of August. Kaisha and Moor Park are others that as wall standards are as yet satisfactory. Dwarf-trained trees of all sorts have been a signal failure. Overhead shelter is an invaluable aid to the setting of the crop; where glass coping is unavailable, a wide board is a great help in warding off heavy rains, cold winds and frost.

There is one item connected with Apricots I do not find mentioned by

Mr. Abbey in his interesting articles, and that is the reference to the losses occasioned by woodlice and wasps. After all one's efforts in the production of these luscious fruits, there is often considerable losses from these enemies. Where nailing is resorted to woodlice find abundant shelter, and become more or less in evidence at the ripening period. The best remedy for these, no doubt, would be to close the existing nail holes with a hard-setting composition during the winter months, and where possible to adopt strained wire instead for training. They are not easily trapped when they can find so much shelter in the walls. Wasps are best dealt with at the nest with cyanide of potassium, and Davis' or Scott's destroyers if they persist in sampling the fruit. Squirrels, too, have a strong liking for Apricots, and if once they taste them nothing less than shooting or trapping will stop them; nets are not of the slightest use, they will make passages through them without any exertion. — W. S., *Rood Ashton, Wilts.*



THE N.C.S. PROXY VOTING.

EVERY member of the N.C.S. owes you thanks for the space you have given in its real and permanent interests. Might I ask whether, on so important a matter as practically the future of the Society depends, every member should be allowed to accord a vote? The annual meeting generally takes place in London in the evening, and of course only a very limited number of members can attend. I think a poll should be demanded or proxies allowed.—AN ABSENT MEMBER.

ALL Chrysanthemum lovers will feel thankful to you for affording space in directing attention to the pitiable position of the N.C.S. But while the interest in its condition is on, could not something be done to make it more of a national society by allowing its distant members to take part in the election of officials without the expense of a journey to London? Surely nominations might be made before some fixed date, and then voting papers be sent to members. A thousand halfpenny stamps would about cover the cost, and we should at least feel we had one other privilege beside the privilege of paying our subscriptions.—J. H. SILSBURY, *Hon. Sec. Shanklin Chrysanthemum Society.*

EQUAL PRIZES FOR PREMIER BLOOMS.

I SCARCELY expected to find that another exhibitor could relate a similar instance to that which I referred on page 78; but on opening my Journal of last week I was surprised to find it was so. The Editor requires an explanation from me as to which of the equal best blooms the certificate was awarded. I did not see the Judges after their decision, to inquire the reason for their choice of two blooms, when the conditions of the schedule stipulated for the "best" individual bloom in the show. The cash prize was to be divided equally, but there were no instructions from Judges or Secretary as to whom belonged the "bit of cardboard;" and as there was a dual claim of ownership I considered the certificate was of no intrinsic value, and did not therefore contest the case. Had I done so it may have generated bad feeling, and a probable "scene in court." I may, however, say that Empress of India—a fine bloom—was chosen from my stand, Mrs. Alpheus Hardy being drawn from my opponent's board. By a curious coincidence this happened in the same year as in the case cited by "Forlorn," 1893.—W. S., *Wilts.*

[Our respected correspondent implies that the certificate was withheld from both exhibitors. In that case the Judges were consistent, and admitted their incapacity to decide the point. We can understand its being difficult with the two sections in competition, and though we have never seen a bloom of Mrs. Alpheus Hardy equal to a high-class specimen of Empress of India, it is of course possible that the first-named in the contest in question was superior to any that have come under our notice. We have to confess to believing in the dictum of a celebrated man that "difficulties are things to be overcome," and we know from no small experience that the easiest way of evading them at flower shows is to give equal prizes. In the case of money prizes it may be equitable enough, but when a mark of honour is provided in the form of a cup or medal we think it ought to be won by the exhibitor who leads a close competitor by half a point, or even less. It is just as easy to appraise the value of two individual Chrysanthemum blooms on the point basis as it is to determine the relative values of two stands of twelve or twenty-four blooms by the same process. Perhaps neither "W. S." nor our "Forlorn" correspondent (page 108, last week), who got the money, may be able to say whether the Judges had recourse to that the most exact of all methods or not. It would be interesting to have the information.]

BELFAST CHRYSANTHEMUM SHOW REFLECTIONS.

THE competition for the Victoria Diamond Jubilee medals and £100 in cash, presented by the Lady Mayoress of Belfast and the ladies of Ulster, and distributed over seven prizes in one class, was undoubtedly a feature of attraction at this great show. Another feature observed by many visitors to the show was the manner in which the rules of societies can be ignored.

Firstly.—In the second prize stand in the Jubilee championship

competition for forty-eight blooms, Japanese, in at least thirty-six varieties, not more than two of any one variety, and all of which must be in commerce, we find Mr. W. Mease of Downside, Leatherhead, exhibiting the "primrose sport" of Madame Carnot. Since then it has been put in commerce as "Mrs. W. Mease." There was an objection lodged against the stand on account of this bloom, the variety not being in commerce, but the officiating Judge, Mr. E. Beckett, Aldenham House, Elstree, qualified it by declaring it to be Yellow Madame Carnot, as introduced by Mr. H. J. Jones of Lewisham, and after being adjudicated upon it was re-labelled as such. It was quite evident that Mr. Mease had not complied with the rules of the schedule, and if Mr. Beckett had ever seen Yellow Madame Carnot as introduced by Mr. H. J. Jones he could not have been mistaken, as the variety before him was a very pale primrose in colour. I considered it quite as distinct from Yellow Madame Carnot supplied to me by Mr. H. J. Jones as Yellow Madame Carnot is from the original. It was therefore a stand which some judges would not hesitate to disqualify on account of this bloom.

The second feature of attraction was the manner in which Japanese blooms can be manipulated with cardboards to appear to the best advantage. Regardless of the rules of the National Chrysanthemum Society, which specify that all Japanese blooms shall be shown on cups not exceeding 3 inches in diameter, in the third prize stand exhibited by Mr. Henry Perkins of Greenlands, Henley-on-Thames, we saw a fine illustration of cardboarding blooms. We observed a bloom of Pride of Exmouth with a circular cardboard $5\frac{1}{2}$ inches in diameter, a thin bloom of Mutual Friend with a circular cardboard of 5 inches in diameter, while thirty-one blooms in all on this stand were assisted and propped with cardboards of various shapes and sizes.

The object attained by using these supports was quite as apparent as were the advantages derived therefrom, especially on suitable subjects. A thin bloom can be made to look much larger and fuller when not pulled down too tightly without seriously detracting from the depth. In fact, when carefully and properly done, as it was in this case, it makes a considerable improvement on a stand of blooms, and places a co-exhibitor at a disadvantage who shows his blooms on the *bona-fide* regulation cups. I have not yet met an individual Irish exhibitor of Chrysanthemums who has ever had any experience in using extraneous aid in setting up blooms further than the regulation cup prescribed by the N.C.S.

Some readers may ask, Why did you let this question lie dormant so long? I would rather an older exhibitor had taken the matter up, but as an Irish exhibitor who made his *débüt* in this class, I have dared to throw down the gauntlet. Thanking you in anticipation for insertion, and for the information it may elicit for the benefit of your many "Mum" loving readers.—PETER BROCK, *The Gardens, Glenmor, Drogheda.*

AN INTERNATIONAL CHRYSANTHEMUM AUDIT IN FRANCE.

I HAVE read with interest "Sadoc's" criticisms (page 84) in the *Journal of Horticulture* of 27th January, and, as affording a guide for the cultivation of the autumn queen in England, I agree with him that it is of little value; but as to the audit being "purely a sentimental one," I think he has drawn a wrong inference. I consider that the audit furnishes strong evidence that many of the varieties which succeed in England are, broadly speaking, failures in the other countries named, and the *vice-versa* has often been witnessed in England, notably in the case of American varieties.

Reading from the Journal (page 63) of 20th January, it also appears that the audit comprises "the best fifty Chrysanthemums," and from the prominent position given to some well-known "plant varieties," such, e.g., as W. H. Lincoln, Wm. Tricker, and others, I think it may be reasonably assumed that "large Japanese exhibition blooms" was not solely in the minds of the organiser or of the voters. Possibly "Sadoc" has overlooked this point. However, in an Italian audit I should certainly place Le Colosse Grenoblois in the first half-dozen and Mrs. C. Harman Payne (which loses its coarseness to a considerable extent here) and Philadelphia, perhaps the finest Japanese incurved, in the first twenty-four, which would also include Good Gracious, Vivian Morel, and Australian Gold; but Mons. Chenon de Leché would take a lower position with me. The colour of Madame Ed. Roger has probably something to do with its being fourth in the list, but if it prove to be a good Japanese incurved it will take a high place here.

Of course, in such an extensive and mixed audit it is undesirable to place too much reliance; but from several years' experience in this country I do not find very much fault with it. Audits of Chrysanthemums in England, obtained by even a limited number of voters, rarely give satisfaction or by any means receive universal approval, and I venture to think that all audits of the golden flower are most reliably made from representative exhibitions when statistics are recognised as facts.—H. BRISCOE-IRONSIDE, *Pallanza, Lago Maggiore, Italy.*

SHEFFIELD CHRYSANTHEMUM SOCIETY.

THE annual meeting was held in the Society's rooms, The Museum, Orchard Street, on Wednesday evening, the 2nd inst., for the election of the officials for the current year and the passing of the accounts for the year ending December 31st, 1897. Mr. John J. Newsham was elected Chairman. The Secretary then read the statement of accounts, which had been previously passed and certified by the Auditors. The balance in hand on the general account is now £96 11s. 4d., being an addition on the year's working of £11 10s. 3d., which was considered satisfactory, taking into account a much increased payment for prizes at the last annual exhibition in consequence of the increased number of competitors

in the various classes and about £10 paid for decorating one of the public halls, at the request of the Corporation Committee, on the occasion of her Majesty the Queen's visit to Sheffield in May.

The Benevolent Fund for professional gardeners, established by this Society, also shows an increase in the balance in hand, the amount available for the purpose of assisting members in case of sickness being about £60. The balance in hand of the Library Funds, for the purchase of new works upon horticultural subjects, is £5 0s. 6d.

On account of the great uncertainty of the weather when the Society holds its annual show, it was deemed necessary to make some provision for probable loss in the income from that source should unfavourable weather be experienced, such as occurred a few years ago, when the Society's balance in hand fell to 9s. After a little discussion it was unanimously decided to transfer £50 to a reserve fund for the above purpose.

The Lord Mayor (Alderman G. Franklin) and the Master Cutler (Maurice G. Rodgers, Esq.), and other gentlemen of influence were added to the Society's list of Vice-Presidents. The annual dinner is fixed for the 16th inst.

HIGHGATE AND DISTRICT CHRYSANTHEMUM SOCIETY.

THE annual general meeting of this Society was held on the 2nd inst., the President, Mr. H. W. Birks, presiding. The minutes of the last annual general meeting having been read and confirmed, the Treasurer (Mr. J. McKerchar) read the financial statement, which showed receipts for the past year amounting to £165 6s. 6½d., the expenditure being £161 2s. 7½d., of which £87 2s. had been awarded in prizes, leaving a balance in hand of £4 3s. 11d. The Secretary (Mr. W. E. Boyce) read the annual report, which, after relating the success of the last exhibition over any previously held, went on to say that the Committee had decided to hold the exhibition for 1898 at the Holloway Hall, and they had every reason to believe that it would be the best exhibition ever held in the north of London. The President, in moving the adoption of the balance-sheet and report, said he thought they had fulfilled their mission. They had not contributed perhaps to "the gaiety of the nations," but they certainly had contributed to the gaiety of Highgate in providing residents with a two-days exhibition which, coming as it did in the month of November, proved very acceptable. It was acknowledged on all hands, even by the Judges, whom he knew as critical men, that the exhibition was entitled to all the praise bestowed upon it. There was also another test to which many societies could not submit—that of finance, and they had to congratulate themselves that, judged by that test, they came out well. Votes of thanks were passed to the retiring President and officers, also to the Vice-Presidents and special prize donors.

Mr. Birks then introduced Mr. C. F. Cory-Wright as the President for the ensuing year. Mr. Cory-Wright said that he did not wish to begin his presidency by finding fault, but he thought they had made a mistake in letting their late President go. Mr. Birks had made it very difficult for anyone to follow him, but at the same time he would endeavour to promote the interests of the Society as far as possible, and hoped at the end of the year they would be in no worse position. The election of officers then took place, Mr. McKerchar and Mr. W. E. Boyce being re-elected Treasurer and Secretary respectively. Mr. Boyce stated that the schedule was well in hand, and, in fact, ready for the Committee to finally settle. The schedule would be larger than the last, and there was every prospect of a very successful year, the new President giving special prizes to the amount of nearly £12, Mrs. C. F. Cory-Wright £2 2s., and, in addition, he (the Secretary) had obtained new special prizes to the amount of £15.

WASTEFUL USE OF ARTIFICIAL MANURES.

NEED I say I was surprised and astonished to read the remarks on artificial manures by Mr. "A. D." on page 81? It is past my comprehension how a well-known critic like your correspondent could have fallen in such errors over such a trifling subject. I think I see him holding up his hands in horror at the wasteful way in which I used those manures; but let us have fact to fact, and then see how he stands.

Mr. "A. D." tells us that the 2 lbs. of basic slag and 12 ozs. of kainit per square yard is "82 lbs. per rod and just about 6 tons per acre," and goes on to assume that as my "plants and fruit" . . . were not "one whit better than Tomato growers ordinarily obtain on ordinary soil, the manures mentioned were either practically worthless or not utilised by the crop," and positively adds that the above quantity ought to be enough for a dozen dressings at least.

I think I stated very clearly that the 2 lbs. of basic slag and 12 ozs. of kainit were applied, not for the purpose of feeding plants—for that was a consideration of secondary importance—but to kill root eelworm, which I knew was present in my soil. I have every reason to believe that the above dose has killed the eelworm, consequently it has accomplished the work for which it was applied; but Mr. "A. D." says the above quantity was sufficient for a dozen dressings. He evidently knows by this that if I had used 1 oz. of kainit and 2½ ozs. of basic slag per square yard it would have killed the eelworm quite as well as the quantity I used. Mr. Iggulden tells us on page 76 that "he forks into his Tomato borders 4 ozs. of kainit, 8 ozs. of basic slag, and 8 ozs. of soot;" but evidently this quantity is not enough to destroy the eelworm, or why does he use the phenyle afterwards? Can Mr. "A. D." make his assertion agree with actual facts? I think not; and I might add that he, like the rest of us, has still a great deal to learn about the use of artificial manures. Mr. "A. D." knows as well as I do that the manures I used are retained by the soil—i.e., they cannot be washed away. This being the case, the

eelworm are dead and there is sufficient manure left for another crop of Tomatoes and ten crops of Grapes; so your correspondent must admit that there is no waste, but that there was a method in my madness.

Many Tomato growers actually lose 75 per cent. of their crop owing to bad attacks of eelworm. I do not claim to have obtained more fruit than growers "ordinarily obtain on ordinary soil," but that I had a full instead of a quarter crop is a satisfaction to myself, and makes me again ask, Where was the waste? As for the manures I used poisoning the borders, that is like begging the question, for I can safely say that the quantity I used would not do so; and to show how absurd it is to suppose they would, I would ask, How was it possible for me to grow a good crop of Tomatoes in the borders if they were poisoned?

I have seen "fine crops of Tomatoes obtained from very ordinary soil, assisted by soot and light sprinklings of artificial manures;" I have seen heavier crops grown in better soil when the sprinklings have been given every day; and what is more, I have grown Tomatoes in ten parts of pure clay, eighty-eight parts of silver sand, and two parts of powdered chalk fed with artificial manures quite as successfully as others in three parts of turfy loam and one part of decayed manure. I presume Mr. "A. D." has carried out a few experiments with artificial manures. Can you ask him to let them be published in "our Journal," and perhaps they will obtain for him the thanks of others besides—W. DYKE.

THE NOTTINGHAMSHIRE HORTICULTURAL AND BOTANICAL SOCIETY.

ON the 27th ult. the officers, members, and friends of the above Society partook of their annual dinner together at the Spread Eagle Hotel, Goldsmith Street, Nottingham, their host being Mr. Councillor Charles Smith, the Chairman of the Committee of the Society. The report read by the Secretary (Mr. J. M. Stewart) was pleasant hearing, because it gave a cheery account of a state of things which does the officers much credit. The Society does its work in a very quiet and unostentatious manner, and deserves more support than it gets from the county gentry. The town does its fair share in supporting the Society from the members of Parliament, the Mayor and Sheriff, and many of the members of the municipality, through all grades, including a good proportion of the large number of working men gardeners who are so numerous in Nottingham.

Among other features are periodical visits made to notable places, partly for holiday amusement, but more particularly for the educational advantages which visits to great gardens give to those who have observant eyes and open minds. Rufford Abbey and grounds, by kind permission of the Right Hon. Lord Saville, were visited on July 1st. Mr. J. Doe, the head gardener, did all in his power to make the visit interesting, and the Abbey with its rich store of art treasures was thoroughly enjoyed, as well as were the well managed gardens and grounds. Sandringham Gardens, by kind permission of H.R.H. the Prince of Wales, were visited on Wednesday, July 28th. Through the kindness of Mr. McKeller the plant and fruit houses were thrown open for inspection, and every possible arrangement was made for the visitors to make a thorough inspection of the beautiful gardens and grounds.

The Society does not lay itself out for large shows, experience having taught the officers that Nottingham people having such splendid displays of both flowers, fruits, and vegetables every week in the market, such as few towns possess, do not care for much more. One summer show is, however, provided; that of last year was held in the grounds of the Arboretum on July 14th and 15th, and was, without doubt, the finest the Society has held for a number of years. Through the kindness of the Corporation of Nottingham the Arboretum will be available again this year, and it is hoped and believed in future years.

Other shows are made more educational. For instance, a fruit meeting was held October 28th in the Mechanics' Lecture Hall, when over 300 dishes were staged. At the same meeting a paper was read by Mr. Hy. Merryweather, jun., on "Hardy Fruit Culture." This paper was a most able one. A Chrysanthemum meeting was held on Wednesday, November 17th, in the Mechanics' Lecture Hall. The numerous and representative exhibits sent in by the members raised the meeting to the rank of an exhibition. Able and practical papers were read by Mr. R. J. Walters, on "Growing for Exhibition;" Mr. E. Palmer, on "Growing for Decoration;" Mr. N. German, on "Growing for Market;" and Mr. S. Thacker, on "The Staging of the Chrysanthemum." These papers proved of great value to all interested in the cultivation of the Chrysanthemum.

The Society's gold medal has been awarded to Mr. J. H. Goodacre, The Gardens, Elvaston Castle, for a superb group of Malmaison Carnations exhibited at the Arboretum Show. Certificates of merit have been awarded to Messrs. Armitage Bros., Limited, for a collection of Peas exhibited at the Arboretum Show; Mrs. Theresa Rothera, for a table decoration of outdoor grown fruit, flowers, and wild Grasses; Mr. C. J. Mee, for six bunches Gros Colman Grapes exhibited at the fruit meeting; Mr. E. Wadsworth, for a collection of Leeks and Carrots; Mr. E. Palmer, for a collection of double Primula plants; and Mr. E. H. Eccleston, for twelve Chrysanthemum blooms of Japanese Chrysanthemums.

The Treasurer of the Society was able to announce that a very substantial balance on the right side of the ledger would appear in the annual balance-sheet. Since the report was printed another meeting has been held, when Mr. H. Weeks of The Gardens, Thrumpton Hall, the raiser of so many good Chrysanthemums, read a most excellent and practical paper on the subject he knows so well, "The Chrysanthemum."



WEATHER IN LONDON.—During the past week we have had almost the first touch of winter, as characterised by a light fall of snow on the morning of Friday last. Neither in the metropolis nor in the surrounding country did the snow remain on the ground. On one or two mornings we have had moderately sharp frosts, notably on Tuesday. Saturday was dry, and a cold wind prevailed, but Sunday was very showery, with occasional gleams of brilliant sunshine. Monday was cold, as was Tuesday throughout the day, rain falling in the afternoon. At the time of going to press on Wednesday it was cold and foggy.

WEATHER IN THE NORTH.—February entered with wet and tempestuous weather. Throughout the night of the 1st a gale raged from the S.W., accompanied by very heavy showers. The weather cleared on the afternoon of the 3rd, and took a decidedly wintry turn. Since then frosts of from 3° to 5° have occurred, and the higher hills are densely covered with snow, while the lower grounds were on Sunday also thickly coated. Monday was a clear wintry-looking day, and Tuesday opened clear and keen with no sign of change.—B. D., *S. Perthshire*.

GARRYA ELLIPTICA.—As a flowering plant the male form only of this Californian shrub deserves a place in gardens, the flowers of the female form being small and inconspicuous. As an evergreen shrub both forms have considerable merit. The flowers of the male plant are greenish yellow, and produced in pendulous catkins several inches in length from the upper nodes and apices of the previous year's growth. The time the flowers are produced depends on the mildness or severity of the winter. In mild weather the flowers commence opening about the middle of January; at other times they are a month later. About London it does well when planted in the open, further north it requires the protection of a wall. When grown against a wall the main branches only should be supported, the others being allowed their freedom. Two large plants in the gardens at Wimbledon House are growing against a wall in this manner, and flower with exceptional freedom.—W. D.

ISLE OF WIGHT.—The Isle of Wight Horticultural Improvement Association held its monthly meeting at Newport on Saturday last. Mr. J. H. Parkin presided. Mr. J. Hygate, gardener, The Briary, Cowes, gave a thoroughly practical address on "The Cultivation of Grapes in a Cool House." The Black Hamburg was the variety he strongly recommended for the purpose. During the subsequent discussion the question of Grape growing in the open air for wine making was discussed, as there are positions on the Undercliffe believed to be suitable for the purpose. The exhibits staged were of first-class quality, and well merited in each case the Association certificate for cultural merit which they received. Mr. H. Drover, florist, Ventnor, staged a collection of Cyclamen and Primulas; Mr. A. J. Cole, Broadlands, Sandown, showed a specimen Cyclamen from seed sown in August, 1896, which had eighty blooms upon it, and the plant itself was over 2 feet through; Mr. G. Honeybourne, gardener to Lady Daly, Ryde, staged a fine healthy plant of Dendrobium Hilli with six spikes. At the close of the meeting fourteen new members were elected. The first Saturday in March Mr. J. H. Parkin will give a paper on "Asparagus."

EARLY HARDY FLOWERS.—The following plants were flowering in the open ground at Hodsock Priory, Notts, on the 1st of February, showing the mildness of the season:—Single and double Snowdrops, St. Brigid Anemone, Tritelia uniflora, Winter Aconites, Pansies, Primroses, all colours, white, yellow, red, rose, and blue; Violets, single and double, in variety; Honesty, double Daisies, Christmas Roses, Lenten Roses, in all shades of colour, grand objects; Strawberry Black Prince, Arabis alba, English Yew, Crocus Imperati, Leucoium vernum, very fine; Iris reticulata, Hepatica, common blue; Hepatica angulosa, Iris reticulata Krelagei, Iris stylosa, Jasminum nudiflorum, Polyanthus Gold Laced, Dutch Crocus, Muscari azureum, Scilla bifolia, Cardamine rotundifolia, Scilla sibirica, Helleborus foetidus, Cyclamen Coum, the brightest jewel in Flora's winter crown; Anemone blanda, Orobis alpestris, Lonicera fragrantissima, common Periwinkles, Erica carnea, Berberis aquifolium, Kerria japonica, Wallflowers, Pyrus japonica, Polygala chamaebuxus, in full flower, said to bloom in May; and Brompton Stock. This is my thirtieth winter here, and I have never seen so much bloom so early in the year before.—J. MALLENDER.

FLUED GARDEN WALLS.—In answer to Mr. Geo. Dyke, on page 56 of the *Journal of Horticulture*, respecting flued garden walls, I may inform him there is now existing at The Gardens, Trafalgar, Salisbury, Wilts, the old flues in the walls, with about six chambers, but the chimney is not to be seen. The flues run about 100 feet long.—G. FULFORD.

ARTICHOKES AU GRATIN.—Well, wash and peel 3 lbs. of Artichokes, trim them into the shape of small Pears, then throw them into boiling water with a pinch of sugar and some salt. Let them boil about twenty minutes, then drain off the water. Add 4 ozs. of butter, one small Onion chopped very fine, some pepper, a gill of milk, and 4 ozs. of grated Parmesan cheese. Stir gently with a wooden spoon, then turn into a baking dish. Sprinkle the top with bread crumbs; place in a very hot oven to gratinate.—A LADY.

HESSLE GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—A meeting of the above Society was held on Tuesday, February 1st. Mr. Geo. Picker, Hesslewood Gardens, occupied the chair, and there was a very large attendance. The essayist for the evening was Mr. J. P. Leadbetter, Tranby Croft Gardens, and the subject "The Cultivation of the Malmaison Carnation." The essayist described all the requirements of this now very popular flower. A good discussion followed the essay, and the manner in which Mr. Leadbetter answered his critics tended to show how well he was acquainted with his subject. Mr. J. Barker, gardener to W. P. Birkenshaw, Esq., showed several plants of Cypripediums in variety. A hearty vote of thanks to the essayist and Chairman terminated one of the best meetings the Society has had.—G. W. G.

CHEIRANTHUS MUTABILIS.—The plant under notice is one which might with advantage be made use of as a winter-flowering plant for the cool greenhouse. It grows readily in light loamy soil, and makes a compact little bush, with long narrow leaves. The flowers are lilac, or sometimes almost purple, a quarter of an inch across, and produced in long slender racemes. They are at their best from the latter end of November to the end of February, though on a large plant flowers are to be found at almost any time. Cuttings inserted in sandy soil in the spring root readily, and by autumn make good-sized plants. As it is a native of Madeira the protection afforded by a cold frame is necessary during severe weather; at other times it can be grown well outside. A number of plants in flower may now be seen in the winter garden at Kew.—D. K.

DEATH OF MR. G. T. CLARK.—We regret to learn of the death of this gentleman, which occurred at his residence, Talygarn, Glamorganshire, on the 31st ult., in his eighty-eighth year. Mr. Clark was a remarkable man, combining extraordinary business capacity with considerable literary ability, and was endowed with great power for historical research. After an active early life he became trustee under the will of the late Sir John Guest of the now celebrated Dowlais Iron Works, which seem to have been at that time in such an unsatisfactory state that he was advised to wind up the estate; but as this would have involved the dismissal of nearly 12,000 men and the ruin of their homes he determined with the co-operation, as trustee, of the late Lord Aberdare, to save the great works and make them prosperous. He succeeded beyond the most sanguine expectations, became known as the "Saviour of Dowlais," and a benefactor to South Wales. Eventually, as may be remembered, Lord Aberdare became President of the Royal Horticultural Society, on the overthrow of the South Kensingtonian dynasty, and called Mr. Clark to his aid on the Council, during probably the most difficult period of the Society's existence, and then was laid the foundation of its present prosperity. Mr. Clark took considerable interest in gardening, but more particularly in forestry, and planted with prodigality. He lived to see a dense forest of choice Conifers established around his home, and draw each other up to a great altitude in the arboreal jungle, for he would have none destroyed. Mr. Clark was a giant in stature and intellect. With a great and generous heart he was ever ready to help those who were in need, and in all projects that were established for the public good in the district, in which he will be long and gratefully remembered. It may be added that on the afternoon of his death Mr. Clark had so far recovered from an attack of influenza that he was able to revise some proofs of a book which he was preparing on the pedigrees of Glamorganshire families. This work he carried on in his study, which he also made during his illness his bedroom as well. Shortly before four o'clock he spoke to the nurse, and said he would like to lie down. She assisted him on to the bed, and it would appear that he died almost immediately from syncope, accelerated by the attack of influenza.

— **SUSSEX RAINFALL.**—The total rainfall at Stonehurst, Ardingly, for the past month was 0.74 inch, being 1.39 inch below the average. The heaviest fall was 0.28 inch on the 5th. Rain fell on nine days. The maximum temperature was 53° on the 22nd, the minimum 30° on the 11th. Mean maximum, 45.25°; mean minimum, 39.02°; mean temperature, 42.13°, which is 5.64° above the average of ten years. Vegetation forward enough for the middle of March, and cooler weather would be welcomed to keep fruit trees back.—R. I.

— **JANUARY WEATHER AT HODSOCK PRIORY, WORKSOP, NOTTS.**—Mean temperature, 42.9°. Maximum in screen, 57.1° on 30th; minimum in screen, 28.9° on 10th. Minimum on grass, 19.1° on 10th. Sunshine twenty hours, or 8 per cent. of possible duration. Rainfall, 0.45 inch. Rain fell on ten days. Warmer than any January of the last twenty-two years except 1884, when the temperature was 43.0°. Drier than any except 1880, when only 0.22 inch fell, and duller than any of the last seventeen years except 1885, when the sunshine was only fourteen hours.—J. MALLENDER.

— **JANUARY WEATHER IN GLAMORGANSHIRE.**—Mr. W. Mabbott writes from Gwernllwyn Gardens, Dowlais:—"The following is a summary of the weather here for the past month. Rainfall 2.07 inches, which fell on fourteen days; maximum 0.48 on the 5th. Average maximum temperature 43°; highest reading 48° on the 3rd. Average minimum 34°; lowest reading 25° on the 9th. There were seven occasions when the minimum was above 40°; below freezing point on nine days. There were twenty-five sunless days. The wind was in the W. and S.W. on fifteen days, and in the E. and S.E. on eleven days; very quiet on the whole and the weather open. A very small rainfall for this district. Fogs were very dense on a few occasions."

— **LONICERA FRAGRANTISSIMA.**—For the last two months a large plant of this Chinese Honeysuckle has been flowering freely at Kew, and now (February 3rd) every shoot is covered with pretty sweetly scented white flowers. The flowers are usually produced in pairs, several springing from every bud on last year's growth. Growing close by are several plants of *L. Standishi*, a species with which the former is often confused. A glance at the two together shows that they are quite distinct. In the former the leaves are shorter, more ovate, not so acuminate, and not nearly so hairy as in the latter; and while many of the leaves of the first named are retained during the whole winter, those of *L. Standishi* usually fall before the flowers commence to open. Flowering, in midwinter, it will be found worthy of a place in any collection.—KEWITE.

— **THE WEATHER LAST MONTH.**—January was extremely mild, similar to January 1882 and 1890, but milder than either. The wind was in a southerly direction on twenty-four days. Total rainfall was 0.78 inch, which fell on nine days, and 1 inch below the average for the month. The greatest daily fall was 0.32 inch on the 4th. Barometer (corrected and reduced), highest reading, 30.629 inches on the 15th at 9 P.M.; lowest, 29.385 inches on the 1st at 9 A.M. Thermometer: highest in the shade 56° on the 30th; lowest, 27° on the 23rd. Mean of daily maxima, 47.09°; mean of daily minima, 36.80°. Mean temperature of the month, 41.94°. Lowest on grass, 21° on the 10th and 23rd; highest in the sun, 82° on the 12th. Mean temperature of the earth at 3 feet, 42.38°. Total sunshine, 41 hours 40 minutes. There were fifteen sunless days.—W. H. DIVERS, *The Gardens, Belvoir Castle, Grantham.*

— **THE R.H.S. EXAMINATION.**—May I be allowed to supplement the advice given by yourself (page 93) and "A. D." (page 102), urging young gardeners to attend the above examination? We are occasionally met with the despairing cry that "the time for preparation is so short." In reply to this I crave permission to ask young gardeners to take a common sense view of the matter, and to bear in mind that the practical work which they have been engaged in since the age of sixteen is the very best preparation they can have. A glance at past questions reveals the fact that the majority of them bear either upon everyday work, or upon scientific matters which careful readers may have observed in the *Journal of Horticulture* from time to time. Good, honest, practical work, coupled with intelligent study of the gardening papers and an occasional contribution to the "Young Gardeners' Domain," ought to suffice to pass any of your readers. Candidates need not trouble themselves about some of the questions, and if they wait for a scheme of examination which everybody regards as being perfect, nothing will be done. The great universal *now* is the only time any of us can call our own, so let us make the best use we can of it, and by submitting to tests let us find out our weak points, remembering that the best man in the long run is the one who learns most from his failures.—PRACTICE WITH SCIENCE.

— **A FROSTLESS JANUARY.**—It is not often that we get a frostless January; but the precedent of those years in recent times that have opened with so mild a month as we have experienced this year warns us against thinking that winter is over. In 1873 there was no touch of winter till January was over. Then, on February 1st, an intense frost set in and lasted into March. The following year was better; it opened in a similar way, and kept on without a break, so that harvest was in July. In 1878, again, there was a frostless first month, and vegetation came on early, only to be nipped by frosts and chilly weather in March and April, an experience that was repeated in 1892. So that the balance of experience is against an open January being followed by an unbroken period of fine spring weather.

— **THE NATIONAL DAHLIA SOCIETY.**—In common with other members of this estimable Society, I am in receipt of the present year's report and schedule of prizes at the great autumn show at the Crystal Palace, on the 2nd and 3rd September next. This is undoubtedly the great Dahlia exhibition of the season, and it has as such no rival. All the same, every autumn exhibition all over the kingdom not only finds Dahlias in the various sections prominent, but they are liberally encouraged by prizes. Dahlias have grown into popular favour in a remarkable way—indeed, they now rank with the Rose and the Chrysanthemum, in their respective seasons, as people's flowers. The National Society has done very much in creating this popularity, for its exhibitions are of the finest, and novelties find at them every encouragement. But in looking over the schedule of the National Dahlia Show, I am struck with the great diversity found in the amounts offered as prizes for these beautiful flowers as compared with what are offered generally for Chrysanthemums. With Dahlias, £4 10s. is thought to be a good first prize for sixty show blooms. Were this a class for sixty Chrysanthemums, fully three times the amount would be looked for. In the case of the large class of eighteen varieties of Cactus Dahlias, a total of 108 flowers, the first prize is only 40s., although amateurs come off better, as they get a first prize of 60s. for 72 blooms. Taking the schedule all through, one sees prizes of the most reasonable kind, and yet great competition results. There is nothing to stimulate greed in them, and that is a pleasing feature. The rage which seems so strongly to exist in the Chrysanthemum world for big money prizes will some day bring about its own cure, in the utter impossibility of committees to find them. Why cannot we see Chrysanthemums exhibited a little for love as Dahlias are, and less to secure big cash amounts?—A. D.

THE REVOLUTION IN INSECTICIDES.

ALL those who have had to do with greenhouses, especially small amateurs, know what a terrible nuisance the insect pests are, and how very nasty and unpleasant have been the means used to get rid of them, and how oftentimes, after all the trouble that has been taken and the unpleasantness endured, the aphides especially have laughed at these attempts. There have been dangers, too, connected with the fumigation, for should the tobacco paper or cloth used flare up into a blaze injury has often been done to the plants, while the person employed in the operation must come out from the house into which he has introduced the fumigator pale and miserable. I remember seeing in a large and well ordered establishment an ingenious contrivance by which the man who conducted the fumigation got admission into the house by a hole low down, so that he was beneath the influence of the smoke.

But this is all now changed. The introduction of vaporisers does away with all the inconvenience and effectually carries out its object. There are two of which I have heard, Richards' and Macdougall's; of these I have only tried the latter. It is simple and economical, while it completely destroyed all semblance of aphids in my greenhouse. It left a smell of nicotine for a short time, but this soon passed away. The house was operated upon about three weeks ago, and I have seen no trace of aphids since. A friend says that he has tried Richards'; it not only destroyed the aphids, but also those terrible pests scale and mealy bug. This is a boon which those who have had to do with *Stephanotis* and other plants of similar character will greatly value, and altogether this new invention will be received with great thankfulness.

There is, however, another side of this picture, as there is in most things. I remember, for instance, many years ago that a flourishing factory was established in the West of Ireland for the purpose of extracting iodine from seaweed, and everything for some years went on well, as the drug fetched a high price, and was not easy to procure; but suddenly it was discovered in Germany in its natural state, and consequently the whole affair in the West of Ireland came to grief. Have we not heard, too, how the profitable culture of the cochineal insect in the Canaries was completely ruined by the discovery of aniline dyes? and so now it has been with the manufacturers of tobacco paper and tobacco cloth. One well-known manufacturer of the former told me that the discovery of these vaporisers entailed on him a loss of £300 a year, while a manufacturer of tobacco cloth told a friend of mine it was not the slightest use making any more. But this is always the case when any new discovery is made; still, with this drawback, I think that all gardeners will gladly welcome the vaporisers.—D., *Deal.*

REMARKS ON PEACH TREES.

FOR a long time I have observed that Peach trees have their length of days and well-doing much affected by the way in which they have been budded and trained in nurseries. Trees ordered and obtained from nurseries are usually dwarfs, half-standard, and standards or riders, and have stems of about 1 foot, 2½ feet to 3 feet, and 5 to 6 feet respectively.

The method generally adopted in budding to produce such trees is to bud the stocks at the various heights named, and from that point of union commence the training of them. Some considerable shortening of the first growths takes place near to this point, with the view of laying the foundation of the head. More of this knife work than is necessary is resorted to, and it too often lays the foundation for corruption and decay. A great enlargement takes place at the point of union, which enlargement becomes unhealthy, and transmits its unhealthiness to the branches.

In a long experience I have seen it to be, I think I may say, invariably the case, that when the head of the tree starts—not from the union of the bud with the stock, but from the top of an extension of the bud and right away from the union—the life and general health of the tree has been more prolonged, and altogether more satisfactory. In other words, when a half and a full standard have their heads started 2 or 3 feet above the union of the bud with the stock they are less subject to gangrene and decay, whether grown under glass or outdoors.

In reference to open-air trees that have no protection at any time from glass, it has recently been asserted that there is no reason why good healthy and productive Peaches should not, with good management, be grown in every part of Great Britain. I should say there are few gardeners who have had the experience necessary to prove this assertion to be correct. It has been our lot to attempt the culture of Peaches on open walls, where most seasons they remained semi-ever-green all winter. Under such circumstances it would be interesting to know how success could be secured. No cultural attempt could be more futile, and it is best described by a waste of time and means.

Having referred to the ripening of wood, I once had a most striking example of the fact that upon the proper ripening of the wood depends, more than on anything else, the success of outdoor Peach growing. In carrying out some re-arrangements at Archerfield in 1858 I moved from under glass to the Peach wall a tree of *Violette Hâtive* Peach that I judged to be quite twenty years old. It was perfectly ripened, and it was the only tree on the wall that bore a crop of fruit in 1859.—D. THOMSON.

HARMFUL AND HARMLESS GARDEN MOTHS—15.

To a small, but very distinct family of moths, some members of which are noticeable in gardens, has been given the formidable name of the “daggers,” suggested, however, only by the form of certain markings visible on the wings of most species. But it so happens, as we discover by individual names, what some people think dagger-like, appears to other eyes to be of a different shape. In the state of caterpillar all these are distinguished by the fact that they are hairy, whereas the bulk of Noctuas come from smooth caterpillars. We cannot have a better specimen of the group than the species called from its commonness the dagger (*Acronycta Psi*), or its relative the dark dagger (*A. tridens*), though really as to darkness of colour the difference is slight; the two species closely resemble each other.

Both species bear upon the wings figures which have been compared to the Greek letter *psi*, or to a trident, black, upon dark grey or brown, also there are additional black markings. The first of these is seen everywhere in June and July, even about London and other large towns, resting by day on trees or walls; the second is more local, but distributed over our islands. During August, September, or even as late as October, the conspicuous caterpillar of the common dagger is feeding upon Hawthorn, Elm, and Lime; it also occurs upon fruit trees, especially Pear and Plum. It is yellow and black, with a shining head, and a coating of grey hairs. In the middle of the back is a slender upright horn, and a broad hump upon the last segment but one. The cocoon is spun up in a crevice, and the chrysalis remains there through the winter. We find the caterpillar of *A. tridens* about the same time on various trees and shrubs. In appearance it differs from the commoner kind considerably, being chiefly black, ornamented with orange and white spots. It has not the horn on the back, but one at the last segment, pointing backwards; it is also slightly humped; the head is very hairy.

Quite a cockney insect is the Sycamore dagger (*A. Aceris*), frequent about London and in the south and east of England. The moth flies in June; the caterpillar occasionally salutes us by falling upon us from a tree when a strong wind prevails in August or September, or we see a full-fed one in the act of crawling down to make its cocoon near the surface of the soil. Named after the Sycamore, it is more often, I think, a dweller upon the Horse Chestnut, and rarely upon the Oak.

Certainly a handsome caterpillar; the greyish body exhibits a series of snow-white spots edged with deep black; the ornamentation is completed by pencillings of orange-yellow silky hairs. There is nothing showy about the moth; it is some shade of grey, having lines and streaks of a smoky tint; the dagger-like markings are indistinct. The Poplar dagger possesses the Latin name of *A. megacephala*, in allusion to the somewhat large head of the caterpillar, which I have frequently taken off Poplars in the west of London; it seems to occur generally throughout England. This caterpillar, when not feeding, reposes on a leaf in a bent posture, the head being drawn round to touch the tenth segment. Upon the white head are two black blotches and a triangular mark; the body is very dark brown relieved by red and white spots placed in pairs. It is full grown in August; the moth appears in June, and closely resembles the preceding, only its colours are rather lighter.

The coronet moth is now and then noticeable upon a garden wall in July, the brown wings having a decided tinge of green, also two white spots, and some dark mottling. Why it should be called by this name is not obvious; certainly the thorax is crowned with a crest of brown and white, but it is not more remarkable than those which many other Noctuas show. Though the Latin name of *Acronycta Ligustri* associates the species with Privet, it is more common to find its caterpillar upon the Ash. It has a head of delicate green, almost transparent; the body is of a sea-green colour, glossy, having narrow white stripes and a few soft bristles on each segment. Another species of the tribe which is common about gardens, and, in some seasons, does a little mischief to cultivated plants, is designated the Knot-grass moth, or *A. Rumicis*.

If the caterpillar confined its diet to the plant first named, or to one or other of the Docks, we should possibly consider it a gardeners' friend, but, liking variety, it feeds upon a number of low-growing plants, keeping out of view if it can. Should one be dislodged, it rolls down curled in a ring, but soon unfolds, and gallops rapidly over the soil, seeking a new shelter. We have most reason to object to its presence in Strawberry beds, where it has been found feeding about the end of June or early in July. Newman states that it is particularly fond of the alpine varieties, eating the leaves freely; it cannot be removed except by hand-picking. This is another handsome caterpillar of the family we are now describing, yet it does not resemble its brethren; however, in spite of its beauty, we may have to kill it, or pass on specimens to some entomologist, who can diet them on Knot-grass. The head is small, black, varied with brown, and upon the body are arranged a series of markings, which remind us of a tessellated pavement; the colours are black, white, rich brown, and orange red. Also there are on the sides rows of warts, from each of which is a pencil of hairs. The cocoon is spun on the ground, and the moth appears the following May or June.

To mention one more dagger moth, the scarce and local species, *A. auricoma*, is only taken in Kent and Sussex. There are two broods yearly—the dingy moth, which has some faint dagger-like markings, flies in May, and again in August; the caterpillar is taken upon the Bramble during spring and summer. We pass now to a larger species of a different habit, which visits the flowers of June, or sips the syrup spread upon trees for the benefit of thirsty moths. It is called the frosted orange or *Gortyna flavago*. The ample fore wings are more showy than those of any of the dagger moths; the ground colour divides exactly into two parts, bright yellow near the base, and purplish-brown beyond; upon this are numerous spots and lines. The crested thorax has a purple disc and yellow sides. The front pair of legs have long woolly scales attached to them; this possibly suggested the adjective “frosted,” applied to the insect. One reason why the moth may occur about gardens is, that the caterpillar has been taken burrowing in the stems of Potato; also, it feeds on those of Foxgloves and Mulleins, but its preference seems to be some species of *Carduus*. About midsummer it will be found nearly full grown, while the plant where it is ensconced is dying down from the destruction of its pith. This caterpillar is of a dull yellow colour, smooth and flattened; behind the head is a horny plate, and at the tail there is another; by these it is assisted in its mining operations. Though hidden within stems, it frequently falls a victim to the attacks of an ichneumon fly.

The mimicry of Nature is exhibited in the moth oddly called the flame, or *Axylia putris*, which sits in June on some flat surface, with the wings folded round the body, and so just resembles a little bit of stick. This deception is assisted by the colours of grey and brown. Its caterpillar is also brown, having scattered spots of yellow and white; it is said to feed on various low plants during August. A more conspicuous moth, sometimes light in tint, sometimes darker, is the cloud-bordered brindle, or *Xylophasia rurea*, which does not, however, restrict itself to country haunts, but appears in gardens throughout our island, where the caterpillar selects for its food some species of *Primula*, though at a push it can live upon grasses. It is rather stout, reddish, striped with white and brown; during the autumn it eats a little, then hibernates to become full grown in May.—ENTOMOLOGIST.



CATTLEYA TRIANÆ SANDERÆ.

THE many varieties of *Cattleya Trianæ* make this section one of the handsomest and most interesting of the *Cattleya* family. Every year sees new forms of excellent quality introduced, the majority of them first gaining publicity at the Drill Hall shows of the Royal Horticultural Society. If one be sent there it is practically certain to be appraised at its proper value by the members of the Orchid Committee, and will, if worthy, receive recognition, either in the form of a first-class certificate or an award of merit. At the meeting held on January 11th *Cattleya Trianæ Sanderæ* (fig. 19), from the celebrated St. Albans firm, was adjudged the last named award. The flower is of splendid form, great substance, and of rich colour. The sepals and petals are very delicate blush, the latter being broad and slightly fimbriated. The shapely lip is rich crimson, with a suffusion of purple, and a yellow throat.

PROPAGATING ORCHIDS.

THE propagation of Orchids is an interesting and in some cases profitable branch of their culture too little practised by cultivators. Many, when large specimen plants come into their possession, think only of increasing their bulk, when a few young pieces taken off and started on their own account would come away with a vigour and freedom quite beyond what they do on the old plants. Recognising this fact, nurserymen as a rule make a practice of breaking up any old plants that come into their hands with distinct advantage to themselves and the plants operated upon. Not only in this direction is propagation desirable, but amateur growers have often plants that they would like to increase, rare forms and varieties of exceptional value when compared with the typical species.

I am not decrying large specimens, far from it, for no one admires them more, or has oftener deplored in the gardening press the loss of the fine old plants of various kinds that at one time graced our exhibitions. I know of a grower in the West of England at the present time who has, perhaps, some of the finest specimens extant of *Saccolabiums*, *Aërides*, and *Vandas*, and is wont to point to them with pride whenever I have an opportunity of visiting him. Still the fact remains that propagation from offsets or division of the

plant is often desirable, and a few lines on the best mode of procedure may not be out of place.

First, as regards raising seedlings. Such a fascinating and interesting pursuit is this, that many more growers than formerly have taken it up. Now, it is not every amateur grower who has the choice of good parents for their seedlings, consequently they use what are to hand, and duplicate crosses that have been raised years ago by interested cultivators. If I may offer a word of advice to these, let me say, By all means keep your seedling plants, and grow them as well as possible, but do not give them fresh names. If you raise a really good and distinct form, send it to the committee of experts at Westminster, and if they consider it worthy they will give it their "hall mark;" if they do not, be careful to grow it for your own pleasure, but do not add to the confusion already existing by giving it a title it does not deserve.

And while on the subject of seedling raising it is well to point out that there are many fine species now under cultivation that would pay far better for raising than hybrids. Not long ago I saw a beautiful batch of a very rare species making good progress with one of our most successful hybridists, and I have no doubt that these will pay a good profit upon all the trouble and expense taken with them, for it is a kind worth a guinea a leaf even now, though it has long been under cultivation. As an instance of what is still worth raising take the beautiful *Cypripedium Fair-rieanum*, even now comparatively rare, though introduced in 1857.

Many of the *Dendrobiums* again, including some of the more rare forms of *D. nobile*, are far from common. Take *D. n. Ballianum*, *D. n. nobilium*, *D. n. Sanderianum*, and



FIG. 19.—CATTLEYA TRIANÆ SANDERÆ.

others that might be named. It will be long before these charming varieties are obtainable at a low price, and they will pay for propagating from an economic point of view, to say nothing of the wisdom of perpetuating such sterling kinds. In this case, of course, the quickest and best method of propagating is by laying in the stems on moss, cocoa-nut fibre, or similar material, and taking a strong, vigorous young plant from every eye. I have described this way of propagating before in the *Journal of Horticulture*, so I will only say, Choose plump stems that have flowered or else were not sufficiently ripened to flower. Keep them always moist, and separate them as soon as the young shoots begin to root on their own account, eventually potting them singly, and growing them as rapidly as possible.

Calanthes, again, are among the most easily propagated of Orchids, flowering bulbs often producing three or four young ones; or if a quicker mode is desired the pseudo-bulbs may be split into four vertically, and each one of the divided portions will produce a young

bulb if carefully nursed until root action commences. The stems of *Thunia Bensoniae*, *T. alba*, *T. Marshalliana*, or any of the finer varieties of these specimens may be cut into lengths and grown into flowering plants in about a couple of seasons. Division of the old specimens is successful in many instances, some of the more easily grown *Odontoglossums*, *Lycastes*, *Brassias*, *Oneidiums*, *Burlingtonias*, *Masdevallias*, *Cypripediums*, *Maxillarias*, *Coelias*, and *Zygopetalums* being easily propagated in this way.

Such beautiful *Cattleyas* as *C. Hardyana*, *C. Mossiae Wagneri*, *C. Mendelli alba*, *C. Trianae alba*, or any other of the finer albino forms may be freely propagated by division, provided due care is exercised both with the divided portion or pieces lopped off and the parent specimen from which they are taken. To kill the old plant that a young piece has been taken from is worse than useless, so it must be kept in mind that both these and the divided pieces must be nursed a little after division. None but healthy, well-rooted plants should be selected for propagating from, as a weak or semi-established plant may be killed outright by the check caused by taking a piece off it. The young plant is by Nature provided with sound eyes that break easily; the older one has to force a growth out of old and perhaps partially decayed ones, hence the need of great care with the latter. —H. R. R.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—FEBRUARY 8TH.

THE meeting at the Drill Hall on the above date was a very bright and beautiful one, the Hall being well filled with exhibits of more than average interest. There were flowers, fruits, and a few vegetables, quality throughout being high.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with Rev. W. Wilks, T. F. Rivers, J. Cheal, W. Poupert, G. W. Cummins, H. J. Veitch, A. F. Barron, F. Q. Lane, R. Parker, G. Reynolds, H. Balderson, F. Gleeson, J. Willard, W. H. Divers, G. Norman, J. Smith, G. Wythes, W. J. Empson, G. Woodward, W. Bates, A. J. Laing, C. Herrin, A. Dean, and J. Wright.

As will be seen there was a large attendance. The proceedings opened with a brisk discussion on a plan of the Council to form a mixed committee to inspect fruits, flowers, Orchids—everything—for the purpose of recommending medals. It met with such general disapproval that it was with difficulty that three members could be found who would consent to act. Eventually, however, the trio was found in Messrs. H. Balderson, G. W. Cummins, and G. Wythes.

Mr. John Watkins sent a dish of *Apple Lord Hindlip*, handsome conical fruits of excellent quality, which had previously received an award of merit, but now a first-class certificate was unanimously granted. Mr. J. A. Prall, Matfield, Kent, sent fruits of a sport from the well-known *Dumelow's Seedling*, or *Wellington Apple*, which it resembles in appearance, but covered with broken stripes of red. Cucumber "Everyday," sent by Mr. Owen Thomas, is a new and productive variety raised and grown in the Royal Gardens. Handsome fruits have been exhibited on previous occasions under the name of *All the Year Round*. An award of merit was recommended.

Mr. Empson, gardener to Mrs. Wingfield, sent well-ripened and brightly coloured fruits of *Chiswick Red Tomatoes*, and was awarded a vote of thanks. Mr. G. Woodward sent from *Barham Court* splendid fruits of *Passe Crasanne*, and a first-class certificate was awarded. A very old Pear, rarely seen in such fine condition. Pear *Bleekling* was sent by Mr. Allan from *Guntun Park*, medium sized fruits, very juicy and sweet, having a general resemblance to *Josephine de Malines*. Mr. J. Clarke, gardener to G. W. Keene, Esq., Mill Lodge, Barnes, sent a basket of *Mushrooms* (cultural commendation).

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. J. Fraser, O. Thomas, J. T. Bennett Poë, H. B. May, R. Dean, J. H. Fitt, G. Stevens, W. Howe, J. Hudson, J. Jennings, C. J. Salter, R. B. Lowe, H. Selfe Leonard, J. Fraser (Kew), W. Bain, C. Jeffries, J. D. Pawle, G. Gordon, C. E. Shea, G. H. Engleheart, J. Walker, J. W. Barr, E. T. Cook, H. J. Cutbush, H. Turner, C. E. Pearson, H. J. Jones, and G. Paul.

A handsome group of well grown Ferns was arranged by Messrs. J. Hill & Son, Lower Edmonton. Some of the plants were small, while others were fine shapely specimens. Several of the leading kinds and varieties were represented, as well as a few that are more rarely seen. Messrs. J. Peed & Sons, Roupell Park Road, sent a number of flowering and foliage plants, comprising amongst others *Cinerarias*, *Cyclamens*, *Lily of the Valley*, *Cypripediums*, *Lilacs*, double *Daffodils*, *Cytisus*, *Aspidistras*, *Palms*, Ferns, and *Saintpaulia ionantha*. Mr. J. Russell, Richmond, was represented by a group of *Euonymus*, including both small standards and very dwarf plants, in the best of health. The same exhibitor also sent a basket of the handsome leaved *Andromeda Catesbaei*, and baskets of *Daphnes mezereum*, *atro-rubrum*, and the double white.

Camellias, both in the form of plants and cut blooms, were sent by Messrs. W. Paul & Son, Waltham Cross. The plants were well grown, and carried blooms of splendid form and substance. The varieties included *Marchioness of Exeter*, *Corallina*, *Double White*, *Mathotiana*, *Tricolor*, *Madame Eugène Massina*, *Donckelaari*, *Monteroni*, *Conspicua*, *Exquisite*, and the more rarely seen *alba simplex*. Considering the earliness of the season this was a splendid exhibit. Mr. J. G. Mowbray,

gardener to Major the Hon. H. C. Legge, Fulmer, Slough, staged a collection of *Freessias* in 5-inch pots. Individually the flowers were not very large, but the spikes were good and very numerous, and made not only a beautiful but a fragrant exhibit that was very highly appreciated by visitors.

Mr. G. Mount, Canterbury, sent a box of *Rose Catherine Mermet*, which for the time of the year was superb. The colour in some of the two dozen blooms was exceptionally rich. Messrs. R. & G. Cuthbert, Southgate, sent a number of pots of *Crocuses*, and some pots of a straw-coloured *Roman Hyacinth*. Mr. W. Camm, gardener to the Duchess of Cleveland, Battle, showed remarkably fine sprays of *Bougainvillea spectabilis* and *Bignonia venusta* in good form. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, exhibited some very interesting hardy flowers, including early *Daffodils* in pots, *Iris histrioides* and *reticulata* in good form, *Hellebores*, *Primulas*, *Anemone pulsatilla*, *Crocuses*, *Galanthus*, and others.

Messrs. Paul & Son, Old Nurseries, Cheshunt, sent a collection of *Hellebores*, including amongst others *Councillor Benary*, *Gretchen Heineman*, *Olban Otto*, *foetidus*, *orientalis*, *lutescens*, *colchicus coccineus*, *orientalis punctatus*, *Colchicus guttatus* and *odorus*. From this firm also came *Saxifraga Boydi alba*, *Cyclamen Coum zonale*, *Hepatica triloba variabilis*, *Primula obconica lilacina*, and *Saxifraga lutea purpurea*, besides *Amygdalus Davidiana alba*, *Forsythia Sieboldi*, *Garrya elliptica*, *Amygdalus Davidiana rosea*, and *Alnus glutinosa aurea*.

A collection of *Primulas* came from Messrs. J. Veitch & Sons, Ltd., Chelsea. The major portion of the plants were not over medium size; but all were well flowered, and some exceptionally free. The colours of the flowers, which were of the refined type, were clear and distinct. The varieties were:—Doubles, white, blue, crimson, rose, salmon, and lilac; with singles, *Gigantic red*, *Gigantic Rose*, *Fern-leaf blue*, *Gigantic white*, *Chelsea Crimson*, superb fringed white, *Salmon (new)*, *Gigantic blue*, *Fern-leaf lilac*, superb fringed red, *Chelsea Rose*, and *Chelsea Blue*. Then there were the floriferous *Star Primulas*, and the now popular blue *Prim-roses*.

Messrs. Cannell & Sons, Swanley, occupied the whole of one side of a table with Chinese and *Star Primulas*. The plants were dwarf and sturdy, and producing large flowers on trusses of good average size. Particularly noticeable were *Lady Marsham*, *Lady Whitehead*, *Mrs. R. Cannell*, *Her Majesty*, *Victory*, *Dr. Nansen*, *Emperor Improved*, *Lady Emily Dale*, *Swanley Giant*, and *Swanley White*. Hardy flowers made a very interesting exhibit as sent by Messrs. Barr & Son, King Street, Covent Garden. There were lovely *Crocus* species, many *Hellebores*, *Lachenalias*, *Iris histrioides*, *Muscari*, hardy *Cyclamens*, and *Narcissus minimus*.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, de B. Crawshay, H. M. Pollett, H. Ballantine, H. Little, H. J. Chapman, W. H. Young, F. J. Thorne, W. H. White, E. Ashworth, J. Jaques, E. Hill, T. W. Bond, W. Thompson, Chas. Winn, S. Courtauld, and J. Douglas.

Mr. Miller, gardener to Lord Foley, Ruxley Lodge, Esher, staged a collection of *Cypripedium* insignis, the plants all being excellently grown specimens. Messrs. B. S. Williams sent a group of Orchids, comprising *Dendrobiums*, *Cypripediums*, *Celogynes*, *Laelias*, and others in splendid condition. Messrs. H. Low & Co., Clapton, were represented by some charming Orchids, in which *Odontoglossum crispum*, *Dendrobiums*, *Cypripediums*, *Laelias* and *Cattleyas* were conspicuous by reason of the shapely well coloured flowers.

Mr. W. H. White, gardener to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, sent a few bright Orchids, conspicuous particularly for quality. There were *Dendrobiums*, *Odontoglossums*, *Sophranitis grandiflora*, *Masdevallias*, and others. Messrs. J. Veitch & Sons, Chelsea, exhibited a collection, of which the chief features were the *Cypripediums* and *Dendrobiums*. These were of widely different forms and colours, but all alike were of excellent quality.

CERTIFICATES AND AWARDS OF MERIT.

Anthurium Dr. Lawrence (W. Bain).—An immense spathe, as broad as it is long. The colour is light salmon pink (first-class certificate).

Calanthe splendens (N. Cookson).—A handsomely formed flower of a bright rose colour (award of merit).

Laelia anceps waddonensis (J. Harris).—A lovely variety. The shape is almost perfect, and the colour pure white save for a blotch of yellow in the throat and purplish veins. The flowers measure $4\frac{1}{2}$ inches across, the depth being 4 inches (first-class certificate).

Phaio-Calanthæ grande (N. Cookson).—A bigeneric hybrid of which the sepals and petals are cream with a dull rose base. The brown lip is dull deep rosy red (award of merit).

[We have not received any list of honours which may have been awarded for exhibits of vegetables and fruit (not placed on the Committee tables) by six members of the Floral and Orchid Committees combined, and three members of the Fruit and Vegetable Committee. We consider this scheme of the Council the most revolutionary and unfortunate that has ever been formulated since these Committees were established. The sooner this fanciful scheme is abandoned the better for exhibitors and the Society.]

ANNUAL GENERAL MEETING.

As is customary, the annual general meeting of the Royal Horticultural Society was held in the Lindley Library, 117, Victoria Street, under the presidency of Sir Trevor Lawrence, Bart. There having been an exhibition in the Drill Hall earlier in the day, the number of Fellows present to hear the President's address on the report was very large—indeed the room was most uncomfortably full, there not being

seating space for everyone. It was certainly one of the best attended meetings that the Society has had for some years. At three o'clock precisely the meeting was opened by the reading of the notice convening the meeting and the minutes of the last annual general meeting, after which a considerable number of Fellows were elected. Messrs. G. Bunyard and H. Turner were elected scrutineers of the ballot, and Sir Frederick Wigan, Bart., and Messrs. J. G. Fowler and J. Hudson were elected in place of Messrs. N. C. Cookson, J. T. Gabriel, and J. Douglas.

The report and balance-sheet, given hereunder, were—and of which a copy has been sent to each member—taken as read, and the PRESIDENT, in moving their adoption, adverted to a few of the salient points. With brevity and clearness was the work of the year reviewed, and throughout the tone of Sir Trevor's remarks was of a congratulatory nature. The Jubilee year had proved a most prosperous and successful one in every respect, and in referring to the excellence of the fortnightly meetings a just tribute was paid to British gardeners, who, by their industry, skill, and disinterestedness, have done so much for the Society. Mention was made of the unfortunate lack of space in the Drill Hall, a circumstance which precludes the shows growing as they might and probably would do. This disadvantage, Sir Trevor continued, demonstrated the necessity of a Hall of Horticulture in our great metropolis, and suggested as a means to that end that every Fellow should increase his subscription from 1 to 2 guineas. Money was the desideratum in this matter, and if this were forthcoming the difficulty would be minimised, if not removed. The superb displays in the Temple Gardens were noticed, as was the fact that even for these the space was by no means sufficient, while the show of fruit the Crystal Palace was not forgotten. Chiswick as it was in the past and as it is in the present was commented on, and special stress was made in reference to the improvements in the structures which have been proceeding apace. Every effort was being made to maintain, or rather improve, the standard of Chiswick from an educational point of view, and the President thought the gardens were every year becoming more and more a credit to the Society. Continuing, the giving of certificates and awards of merit to new plants, with medals to larger exhibits, was referred to, and Sir Trevor expressed the fear that they were being too lavishly accorded, as the more that were given the more would their value be lessened. This he thought regrettable, and hoped that by making future selection more rigid, the value of the awards would be maintained instead of being reduced. Several other points were curtly noticed, one of the most interesting being the fact that the Fellows increased in numbers by 325. This, however, is somewhat put in the shade by the record that has been established at the last two meetings, when 113 members have been added. The financial position is excellent, as may be seen from the balance-sheet below.

SURGEON-MAJOR INCE made some remarks upon the report, which created a considerable amount of amusement, especially when the speaker ventured into statistics that were mainly wrong, as was promptly demonstrated by several Fellows. Dr. Maxwell T. Masters was quite to the point in his remarks when seconding the adoption of the report, which was carried by acclamation. Surgeon-Major Ince was more correct when proposing in eulogistic terms a vote of thanks to Sir Trevor for presiding. Mr. G. Wythes was the seconder, and it is needless to say the motion was passed without a dissentient voice.

Mr. ALEX. DEAN rose to draw the attention of the meeting to the innovation in granting medals which had been inaugurated at the Drill Hall that day, and which, he rightly observed, trench upon the Committees' legitimate work. The system that the Council had adopted was to select three members from each Committee, who amalgamating, proceeded to adjudge upon the groups. Apart from depriving the individual Committees of their proper duties, this system could not, for obvious reasons, be followed up successfully, and the speaker forcibly demonstrated this, and implored the Council to reconsider the matter.

Sir TREVOR LAWRENCE, in replying, said he thought it would be better if the chosen three from each Committee dealt only with exhibits of the particular Committee to which they were attached, and presumably this will be placed before the Council. But this system of choosing three members for the purpose has, as Mr. R. Dean pointed out, been in vogue with the Floral Committee for several years.

The proceedings, after some remarks by Mr. Berry of Faversham, were brought to a close.

REPORT OF THE COUNCIL FOR THE YEAR 1897-98.

The year 1897 will long be remembered as the Diamond Jubilee year of her Most Gracious Majesty, Patron of our Society—remembered, too, for the innumerable projects set on foot in celebration of the event.

In the report for 1896 the Council announced that they had no intention of adding to the number of projects by starting any ambitious horticultural celebration which would lay any strain upon the resources of individual Fellows. They stated that they proposed to establish a Medal of Honour in Horticulture, and that they had obtained the sanction of her Majesty to call it the Victoria Medal.

This proposal has been duly carried out; the medal has been prepared, and conferred on sixty recipients distinguished in various ways in our art and science; and it is believed to be the only medal associated with her Majesty's Diamond Jubilee, with the exception of the one founded by herself. It is, moreover, the only horticultural distinction in this country that is conferred for personal merit only, and is entirely unconnected with prizewinning.

By their action in this matter the Council consider that they have commemorated her gracious Majesty's Jubilee in a becoming and enduring manner; in a manner absolutely distinct from all other

celebrations; in a manner that lays no tax upon the Fellows of the Society; in a manner distinctly to the advantage and encouragement of horticultural skill and effort; and lastly in a manner which will carry down to all future generations of horticulturists the memory of Queen Victoria's long and happy reign.

Under the head of ordinary expenditure at Chiswick £1850 has been spent on the general work and maintenance of the gardens. Amongst other work, house No. 11 has been partially, and No. 10 entirely rebuilt, whilst No. 5, devoted to Peaches, has been raised in height and a new roof put on. All this work has been done by the Society's own staff of men. The receipts by sale of surplus produce amount to £357, making the net ordinary cost of the gardens £1493.

At Westminster, twenty Fruit and Floral meetings have been held in the Drill Hall, James Street, Victoria Street, and fifteen Committee meetings have been held at Chiswick, besides the larger shows in the Temple Gardens on May 26th, 27th, and 28th, and at the Crystal Palace on September 30th, October 1st and 2nd. Lectures have been delivered at seventeen of the meetings, exclusive of those given at the Crystal Palace. The number of awards granted by the Council, on the recommendation of the various Committees, has been as follows:—

Award.	At Provincial Shows.	Affiliated Societies.	On Recommendation of				Total.
			Fruit Committee.	Floral Committee.	Orchid Committee.	Narcissus Committee.	
Gold Medal	1	—	6	5	2	—	14
Silver-gilt Flora	5	—	—	40	8	2	55
Silver-gilt Knightian	2	—	16	—	—	—	18
Silver-gilt Banksian	—	—	3	28	4	—	35
Silver Flora	7	14	—	79	28	4	132
Silver Knightian	1	30	19	—	—	—	50
Silver Banksian	11	—	19	81	39	3	153
Bronze Flora	—	9	—	7	—	—	16
Bronze Knightian	—	—	4	—	—	—	4
Bronze Banksian	—	27	1	24	2	—	54
First-class Certificate	—	—	—	24	25	5	54
Award of Merit	5	—	35	209	91	6	346
Botanical Certificate	—	—	—	4	27	—	31
Cultural Commendation	4	—	16	1	25	—	46
Total	36	80	119	50	251	20	1008

[Ninety bronze Banksian medals have been granted to Cottagers' societies.]

The Council must again express their opinion that there still appears to be a tendency to multiply unduly the awards recommended, and they earnestly request the several Committees to consider seriously whether there is not a real danger of impairing the value of these distinctions by such increase of their number; and whether it would not be possible, as well as politic, to be somewhat less generous in the recommendation of awards during the ensuing year. This is a question which the Council cannot but regard with solicitude, and they hope that every member of the Committee will consider that he has a real individual responsibility for the welfare of the Society in this matter.

On Wednesday, July 14th, the Council invited all the members of the several Committees to lunch with them at Chiswick, and to examine the Gardens. After the luncheon an address was delivered by Dr. Maxwell Masters, F.R.S., on the possibilities of an extended usefulness of the Gardens. A full account of the proceedings will be found in the Journal, vol. xxi., page 160.

The Council desire to draw the attention of all Fellows of the Society to the more extended use which the Scientific Committee might be to them if they availed themselves more freely of their privileges in submitting instances of diseases of or injuries to plants, caused by insects or otherwise. The Scientific Committee is composed of gentlemen qualified to give the best advice on all such subjects, either in respect to the prevention or cure of disease. The Committee is also glad to receive specimens of any subjects of horticultural or botanical interest.

The Council wish to express their thanks to the Director of the Royal Gardens, Kew, for allowing them to consult Mr. Massee, F.L.S., on the fungoid diseases, &c., brought before the Scientific Committee, and to that gentleman for his readiness in giving them the advantage of his knowledge and advice.

That Fellows, whether near or at a distance, may derive as much benefit as possible from their connection with the Society, the Council have recently appointed Dr. J. Augustus Voelcker, M.A., Consulting Chemist to the Society, and have entered into an arrangement with him whereby all Fellows, who are amateurs or *bonâ-fide* gardeners, may obtain at very small cost analyses of manures, soils, &c., or advice as to what description of chemical manure will be most suitable and profitable for application to any particular soil. The Council wish to draw particular attention to two points—viz.,

(i.) That Fellows desiring an analysis must follow explicitly and exactly the directions laid down in the book of Arrangements, 1898, and

(ii.) That Fellows who are in any way commercially interested in any artificial manure trade or horticultural business cannot claim Dr. Voelcker's assistance as Fellows, but if they wish to consult him must do so in the ordinary way of business.

The Society's great show, held (by the continued kindness of the Treasurer and Benchers) in the Inner Temple Gardens, was as successful

ANNUAL REVENUE AND EXPENDITURE ACCOUNT FOR THE YEAR ENDING DECEMBER 31ST, 1897.

Dr.	£	s.	d.	£	s.	d.
To ESTABLISHMENT EXPENSES—						
Salaries and Wages	685	5	0			
Rent of Office	173	3	0			
Printing and Stationery	209	8	11			
Journal—Printing and Postage	605	19	8			
Postages	99	15	3			
Coal and Gas	5	4	8			
Donations to Auricula and Primula Society	10	0	0			
Miscellaneous	105	12	3			
Commission on Advertisements	28	14	6			
Painting Orchids	37	11	0			
				1960	14	3
„ VICTORIA MEDAL OF HONOUR				174	14	3
„ SHOWS and MEETINGS—						
Rent of Drill Hall and Cleaning	104	15	0			
Temple Show	609	19	7			
Crystal Palace Fruit Show	254	3	1			
				968	17	8
„ PRIZES and MEDALS—						
Rose Show	37	5	0			
Committee Awards, &c... ..	371	10	2			
Expenses Floral Meetings and Conferences... ..	40	14	4			
Labour	76	4	6			
				525	14	0
„ CHISWICK GARDENS—						
Rent, Rates, Taxes, and Insurance	237	8	3			
Superintendent's Salary	200	0	0			
Pension, late Superintendent... ..	180	0	0			
Labour	759	1	5			
Implements, Manure, Soil, Packing, &c.	123	11	0			
Coal and Coke	184	15	0			
Repairs	80	12	1			
Water and Gas	12	3	5			
Miscellaneous	73	14	11			
				1851	6	1
				5481	6	3
„ Balance to General Revenue Account				822	7	4
				£6303	13	7

Cr.	£	s.	d.	£	s.	d.
By ANNUAL SUBSCRIPTIONS						
				3824	12	6
„ SHOWS and MEETINGS—						
Temple Show	1262	14	8			
Crystal Palace Fruit Show	235	7	9			
Drill Hall Meetings	30	9	0			
				1528	11	5
„ ADVERTISEMENTS IN JOURNAL				323	0	4
„ SALE OF JOURNAL				36	9	9
„ MISCELLANEOUS RECEIPTS				40	8	6
„ DIVIDENDS—						
Davis Bequest and Parry's Legacy	56	18	4			
Consols, £1750	46	0	8			
Local Loans, £500	14	10	0			
				117	9	0
„ INTEREST ON DEPOSIT				15	6	4
„ PRIZES AND MEDALS				60	12	6
„ CHISWICK GARDENS—						
Produce sold	326	18	6			
Admissions	2	19	6			
Miscellaneous	27	5	3			
				357	3	3
				£6303	13	7

We have examined the above Accounts, and find the same correct.

(Signed) HARRY TURNER } Auditors.
JAMES H. VEITCH }
HARPER BROS., Chartered Accountants,
10, Trinity Square, E.C.

6th January, 1898.

BALANCE-SHEET, 31st DECEMBER, 1897.

£	s.	d.	£	s.	d.
To SUNDRY CREDITORS			58	2	8
„ SUBSCRIPTIONS, 1898, paid in Advance	94	10	0		
„ ADVERTISEMENTS, 1898, paid in Advance	7	6	3		
			101	16	3
„ LIFE COMPOSITIONS, 31st December, 1896... ..	370	4	0		
Do. do. 1897... ..	178	10	0		
			548	14	0
„ VEITCH SPECIAL PRIZES			30	0	0
„ CHISWICK SCHOLARSHIP			25	0	0
„ GENERAL REVENUE ACCOUNT—					
Balance, 1st January, 1897	3755	0	9		
Less Bad Debts	2	2	3		
	£3752	18	6		
„ Balance for the year, 1897, as per Revenue and Expenditure Account	822	7	4		
			4575	5	10
			£5338	18	9

We have examined the above Accounts, and find the same correct.

(Signed) HARRY TURNER } Auditors.
JAMES H. VEITCH }
HARPER BROS., Chartered Accountants,
10, Trinity Square, E.C.

6th January, 1898.

£	s.	d.	£	s.	d.
By SUNDRY DEBTORS—					
Annual Subscriptions outstanding, estimated at	15	15	0		
Garden Produce	21	2	8		
Advertisements	94	17	9		
Rates and Taxes (Chiswick) paid in Advance	21	15	10		
Interest on Local Loans	3	12	6		
			157	3	9
„ INVESTMENTS—					
2½ per cent. Consols, £2122 8s. 9d. cost (£2022 8s. 9d. of this sum is held by the Society, subject to the provisions of the will of the late J. Davis, Esq.)	1892	11	3		
2½ per cent. Consols, £1750 cost	1768	5	0		
3 per cent. Local Loans, £500 „	557	11	0		
			4218	7	3
„ CASH AT LONDON AND COUNTY BANK—					
On Current Account	160	13	8		
On Deposit Account	800	0	0		
„ CASH IN HAND—					
Head Office	2	11	1		
Chiswick	0	3	0		
			963	7	9
			£5338	18	9

THE GARDENERS' ROYAL BENEVOLENT BALLOT.

I NOTE with some interest the remarks in your last issue by "A. D." on the above Institution, but I must confess that my feelings are by no means in harmony with his ideas when he says, "In that case signing would be needless, &c." Voting papers are sent out to all subscribers, and should be a reminder as to whether they have or have not paid their dues. People are forgetful in these matters, and it would be very hard for a willing person to be passed by for the sake of the cost of a reminder to give him that opportunity which would entitle him to his vote, and his signature is a guarantee that he is living and exercises his right in voting. If papers were allowed to be filled up without a signature, anyone might return them, and the rightful owner be quite ignorant of the fact; also you may have a fair number filled up after the owner was dead and the Committee know nothing about it. It is just as reasonable to say, "I have got another man's cheque and will fill it up, take it to the bank, and expect to get the money without his signature." I must confess that I fail to see in what way "A. D." is justified in describing the ballot "a sham one." I have attended two annual meetings, and have not seen the least cause to find fault with the way the business is conducted. What does he mean?

There is one thing in the voting that I think the subscribers to the Institution must have lost sight of—namely, the miserable support they

have given to one of their Vice-President's candidates. Of the forty-four candidates approved we must admit they one and all are worthy of our sympathy, and it is much to be regretted that the Institution is not in a position to give them that support they stand in need of. It is equally to be regretted that the whole of these candidates did not see the wisdom of supporting the Institution in earlier life. In glancing over the list of non-successful candidates we find two commenced to subscribe to the Institution at the age of seventy-four years, three at sixty-nine years, one at sixty-two years, and seven at the ages of fifty-one to fifty-eight years, and the others not at all, excepting in the case of widows whose husbands have subscribed, one eleven years, one nine years, one eight years, one seven years, and one one year. Of the above there must have been at least six that felt themselves on the doorstep of the Institution before they commenced to pay at all, and also found the Gardeners' Royal Benevolent Institution the only harbour of refuge to keep them out of the workhouse, and by paying two or three pounds they would have a claim on the Institution for so doing, and their benevolence points to themselves, as they could only hope and expect to have their money returned a thousandfold.

We are all glad to sail into any port in a storm, and doubtless that must have been their feeling, but if the Institution were dependent on the like of these subscribers and non-subscribers it would quickly vanish, hence the question arises, Who are the mainstay and backbone of the Institution? Why, the donors, who hand over their money, knowing

they will never be an incumbrance to the Institution. Consequently it is principally from them and them alone that the Institution is able to exist, and this is a fact that should not be lost sight of. Although every candidate commands our sympathy, and that in the strongest form, still we naturally lean most to those we personally know and can truly sympathise with, and of those in the last election I know only one, Wm. Freeman. This man has been known by my employer for over forty years as a hard working, honest, deserving man. He was in his last place thirty-nine years. His employers and all their family are dead, every one of them. His brother, for many years manager to Messrs. F. & A. Dicksons, Chester, is dead, and his other brother, for many years gardener to the Right Hon. the Earl of Derby, Knowsley, is dead also. He invested his money in a business in the hope of getting a living in his declining days, but has lost the whole, and he now finds himself on the world almost without a friend.

My employer said, "This is a very proper case for the Gardeners' Benevolent, as he comes within the pale of their constitutions; bring him forward and see what you can do." He was duly nominated, and his case canvassed in the usual way, supported by a Vice-President, with a result that in three years 1425 votes were recorded in his favour—i.e., including my employer's own votes. In glancing over the list of subscribers, other than those who are nursery and seedsmen or derive their livelihood from gardening pursuits, how many are there who have supported the Institution with a more liberal hand than my employer has, and who has received less support? I ask this question in the interests of the Institution, and not from any selfish motive. In 1866 he gave £105, and has since subscribed 21s. a year. In 1867 he gave £52 10s. for his son, then a youth in college, and in 1889 he gave £10 10s. for his grandson, then a little boy: total £168. Surely such a donor deserves more support than he has received. In contrast with this I will quote an instance that occurred a few years ago.

A railway porter lost his wife and left him with several children, one being deaf and dumb. I suggested to the porter that he should get this child into an institution, to which he agreed, and I appealed to my employer for help, and he at once said, "Oh, yes; I am connected with an institution that I have supported very liberally for many years, and as executor to a friend have £1000 to hand over in a day or two, but she has only one chance, as she will then be too old. However, I will tell them this is my candidate, and shall expect her put in, or will turn my back on them, as I will not risk a defeat." The child was sent for; hence the power of a liberal donor; and who has more right in the selection of candidates? How very different in Freeman's case. Here is a Vice-President of the Institution given £168, and he does not receive support that is accorded to a few subscribers who have thrown down at the doors of the Institution a few pounds in the last years of their independency, so as to enable them to say, "Being a subscriber I expect your votes."

What a recompense to a Vice-President who has supported the Institution so well, and how encouraging to other gentlemen to become Vice-Presidents! Were it me I would, with all respect, request the Institution to pass a wet sponge over my name, as a more suicidal thing I never knew. If this is calculated to benefit the Institution the sooner I am a stranger to it the better. If the name of a Vice-President is a guarantee as to the genuineness of an institution it should be an equal guarantee that a candidate is worthy of support.—J. OLLERHEAD, *Wimbledon*.

GROWING POTATOES WITHOUT TOPS, AND PREPARING TUBERS FOR GOOD CROPS.

I WAS much interested in reading Mr. D. Thomson's remarks (page 83) on "A Curious Way of Growing Early Potatoes." In the garden where I was first employed early Potatoes were grown for use at Christmas and onwards by an old man who was gardener there until a few months previous to the time I began work, when he died and was succeeded by his grandson.

I heard that they were grown by breaking off the shoot of the Ashleaf variety, and that if the first shoot was broken off the Potatoes would not shoot again, but throw out tubers instead.

In my younger days many people in Dorsetshire firmly believed that the old Ashleaf would not grow if the first shoot was broken off, and some old men in the village were surprised to hear of a dairyman who came from a distance making it a rule always to rub off the first shoots of his Ashleafs, and to lay them out to form a second growth from which he depended on getting a much better crop.

The "grandson" above mentioned was not successful in procuring Potatoes in the same way as his predecessor, and I have wondered very much how they were grown. It is only about three weeks since I was talking about it, and saying the old gardener had a secret for growing Potatoes early that no one else seemed to know anything about.

If I am not mistaken those were grown outdoors, and covered with ridges of ashes: but be that as it may, the new tubers were adjoined to the old the same as we sometimes see small tubers growing on a dry or partially decayed one when stored for the winter, and were, I should think, about the size on an average of a large Cobnut. Do not you think it quite possible that the "old man's" new Potatoes were grown as described by your correspondent, Mr. Thomson?—SOMERSET.

[We know that by persistently suppressing the growth of tubers of Early Ashleaf, and planting such tubers, or placing them in boxes with soil, that they will supertuberate, but the progeny is very small. Large tubers of later varieties prepared as described by Mr. Thomson afford

very much larger "new Potatoes" at Christmas and onwards. As to the first and second shoots of the Ashleaf variety being removed or retained, when the tubers are heaped in a rough and ready way in a dark warm place, they will have sprouts like straws that fall off with the slightest touch. They are of no use, and the second growths from the tubers made in a light position are much better; but the best plan of all is to winter the tubers thinly in a light, cool, frost-proof place, and let the first growths develop steadily and sturdily, and be affixed so firmly as not to be easily displaced. Most gardeners can find suitable positions for preparing in shallow boxes the planting tubers of their first earlies. A labourer suspends his boxes from the ceiling of his back kitchen, and we think our racy correspondent, Mr. W. Pea, could cite a case where the cost involved in making provision for preparing the tubers in tons has proved a wise investment, as resulting in earlier, heavier, and more valuable crops grown by the acre for the London market; but whether he feels at liberty to do so we do not know.]

A LITTLE MIXTURE.

TEN MINUTES' NOTES.

LAST week I confined my notes to conservatory climbers; this week the following subjects have entered my mind, and almost in an involuntary way run from my pen, for I do my jotting first, and write my little introduction last.

CENTAUREA CANDIDISSIMA.

This is not so much grown now for bedding purposes as formerly, possibly on account of it being somewhat miffy to propagate. We use about 400 plants, principally as an edging for four large beds of the now old-fashioned Tom Thumb "Geranium," and they are very effective. The beds were originally laid out from a design of the late Mr. Ingram of Belvoir, and have a permanent edging of Box a foot high, and next to this greenery, with the mass of scarlet behind them, the Centaureas show to advantage. I am usually successful, or perhaps fortunate, in raising sufficient Centaureas for the requirements of the beds, and will briefly describe my method of increasing the plants. Wet summers are rather unfavourable for the production of good cuttings, as the growths are apt to be too sappy. In this case they are better cut and laid on the potting bench for a day to dry somewhat. Select the thinnest and most wiry cuttings, and with a sharp knife take them off with a heel; trim each heel cleanly, remove with the hand the lower leaves, at the same time rub off as much of the woolly covering with the thumb and fingers as possible with discretion, finishing by shortening the tips of the leaves. Insert about eight of these in a 6-inch pot, filled with a mixture of two parts loam to one of leaf soil, and a good sprinkling of sand; well crock the pots, and make the soil quite firm, using dry sand on the surface, so that a little falls into the holes with the cuttings; well water them in, and plunge in ashes to the rim in a cold frame in a north aspect. Keep close until rooted, then remove to cool vinery, water very sparingly, pot off in spring.

SPROUTING POTATOES.

Although an advocate of setting on end a few early Potatoes for frame work or early borders, I have yet to learn the wisdom of thus packing the tubers months before they are needed for planting, whereby they exhaust their vitality, the tubers looking like shrivelled mummies with abnormal growths of 2 inches and the box full of cobwebby roots. I contend this is against Nature, and must lead in many cases to disappointing results. The chances are that when these sets are put in the ground the roots will perish, and then fresh ones must of necessity be produced before the shoot can be sustained; and, moreover, should the weather be cold and wet, decaying of the sprout is inevitable. A medium sprout is much better. A month is long enough to allow this to be attained when the tubers are set on end in a cool place, and they are then not exhausted. I find it a good plan to well bake in the sun all early seed Potatoes after they are taken up by placing them on a hard path for several days, moving them over from time to time to become well greened. They rarely take the disease after that process, and will stand more frost. When coming through the ground the growth from these ripened tubers is always firmer and tougher—i.e., not nearly so succulent and tender as those from unripened tubers, and these may be damaged by a slight touch of frost, which the others resist. Another point is worth mentioning. Vermin have an aversion to these greened tubers, and will not touch them so long as they can find others more suitable to their palate.

AGAPANTHUS UMBELLATUS FOR PERMANENT BEDS.

An outdoor bed of this Liliaceous plant is somewhat of a novelty, but there is no reason why it should not be more generally so employed, especially in the southern counties, where it may be planted in clumps in the nooks and warmest corners of the hardy flower garden. We have only a small bed of them here, and in the rather exposed position the plants flower very well. They prefer a strong loam, with decayed manure, and some sharp sand to keep the soil porous, plenty of water in summer, and a covering of fallen leaves during winter to preserve them from severe frost, or excessive moisture when at rest. This covering should be removed gradually to allow an easier transition to the elements of light and air. After being removed altogether, a dressing of decayed manure, pointed in with care, benefits them. In genial summers they flower during September. This plan may be well worthy a trial by those who have several large pots of Agapanthus over their requirements.—GEO. DYKE, *Stubton Gardens, Newark*.

PRESENTATION TO MR. R. PINNINGTON.

THE annual general meeting of the Liverpool branch of the N.A.G. Association was held in the Common Hall, Hackins Hey, Liverpool, on Thursday last, W. Histed, Esq., presiding over a good attendance of members. A notice of motion had been placed on the minutes in the name of several members to either break up or re-arrange the Liverpool branch, but this had been withdrawn, and wisely so, judging from the splendid report read by the Secretary. The Treasurer's report showed a balance of nearly £10. The newly elected President is J. H. Drake, Esq., and Messrs. H. A. Robins, Treasurer; J. M. Smyth, Secretary; A. Cooper, Assistant-Secretary; D. W. Cangle, Exhibition Secretary; and Messrs. Glover, Gillanders, and Pearce were added to the list of Vice-Presidents. Several handsome contributions were promised to the prize fund.

The Secretary, in the unavoidable absence of the President, Isaac C. Glover, Esq., said he had a pleasing duty to perform—viz., to recognise in some tangible form the continued support given to the branch by Mr. R. Pinnington of Roby, who by his kind manner and ready assistance as adviser, lecturer, adjudicator, and in many practical ways had endeared himself to all members. For himself he could only speak in the highest terms of Mr. Pinnington's ability and friendship, and he was quite sure that every member was the better for having known Mr. Pinnington. He had great pleasure in asking Mr. Langley to present Mr. Pinnington with a handsome travelling bag, with initials engraved. Mr. Langley said that the compliment was thoroughly deserved, and trusted that the recipient would be long spared to use the bag, also to continue his good work amongst them. Mr. Pinnington, in reply, thanked all very much for their kind appreciation of his work, which he assured them had been willingly given. In no profession was there more scope for one's abilities, or greater gain to mind and body, than the delight of cultivating plants and flowers. The value of his work would have been amply repaid by the kind record in the minute book, but as the Committee thought differently he could only thank them again for their handsome present, which would always be highly valued. The usual votes of thanks closed the proceedings.

THE YOUNG GARDENERS' DOMAIN.

POTTING AND WATERING.

THIS is a subject upon which a large volume could be written without exaggerating its importance. Where good plant culture is desired it is essential for this work to receive strict and careful attention. It forms part of the young gardener's duties for the whole of the year, and what a credit it must be for each one to show his chief that he is not careless in this matter. In many cases the plants under his charge will soon show whether they are receiving proper attention or not. If the young gardener is at all interested in his work he will not be satisfied unless good results follow and the plants repay him for the little extra attention he has bestowed on them.

The main object of all gardeners should be to do everything just at the proper time. If any plant is worth growing at all it should be worth growing well, and at no period must it be neglected, or good results cannot be expected. Spring is the busiest time for most gardeners, and a few hints on potting may prove helpful to young readers of the "Domain." Always use clean and dry pots, which must have thorough drainage, with clean crocks of various sizes. A large piece, with the concave side downwards, should be placed at the bottom of each pot, and a few smaller pieces over it, the quantity of drainage being decided by the size of the pots. Over this a thin layer of moss or rough fibrous loam is placed to prevent the soil from getting among the drainage.

The next thing is to prepare the compost, which should always be of the same temperature as that in which the plants have been previously growing. Both pots and soil ought invariably to be prepared before the plants are brought in. This being done we may proceed with the work and carefully turn out the plants. Remove the crocks and all loose soil around the roots, and if they are matted together it is advisable to open them out. A handful of compost should be put at the base of the roots and made firm. In most cases pot firmly with the fingers alone, as the potting stick is the cause of much injury done to the roots, especially with tender-rooted plants. I find it advisable to dispense with it altogether in many cases, but with such plants as Chrysanthemums, Azaleas, Camellias, Strawberries, and others, it is impossible to repot without it. It should never be put near the roots, and when used the operator must be careful not to injure the roots by ramming too severely.

After potting, the plants should be kept close until root action has recommenced. Well shade from the hot sun, and keep a somewhat moist atmosphere by gently syringing the plants or between the pots. In my opinion this is the most important time for careful watering. The plants should first of all be given enough to settle the soil, but no more until they really require it. The method by which many gardeners are able to know when a plant is dry is by tapping the pots with the knuckles, but I have found this method of examination will not suffice in many instances. It is always best to test plants which require the most careful watering by lifting them, when one can quickly feel if they are heavy enough for the size of the pots. In winter all plants require to be kept somewhat on the dry side, particularly those in greenhouse temperatures.—J. F. D., *Yorks.*

MUSA CAVENDISHI OR BANANA.

It is not my intention to write regarding the note on Bananas on page 35 of the Journal, but it is seldom we see this delicious fruit mentioned in gardening literature. The plentiful foreign supply, and the expense connected with their cultivation at home, seeing they need more heat and room than can be spared in most places, are the reasons why they are so seldom seen growing. I enclose a photograph of a bunch of fruit which was taken about the middle of December last, the first fingers of which were ripe on the 8th of January. The plant was from a sucker detached during the spring of 1896, and grown in a 15-inch pot. The plant was used in the mansion for some time instead of a palm, and was never at that time intended to be utilised as a fruiter. As a plant in the bed where they are grown for fruit was making little progress, it was taken out and this plant put in its place during March of last year. I think the photo will show that the fingers are a good size, and in all there



FIG. 20.—MUSA CAVENDISHI.

were 187 fully developed on the bunch. An opinion of the photo will be gladly received, and if it is considered worthy of reproduction all the better.

I am of opinion that an ordinary stove temperature during the dull winter months is most suitable for Bananas, raising it with the increased sunshine in the spring, when they grow very rapidly. They get plenty of top-dressings of horse and cow manure, besides being watered with sulphate of ammonia dissolved in the water. I never had anything to do with Bananas till a little over a year ago, and I would be thankful to anyone who has had experience with them, whether belonging to the Y.G.D. or the elders in the profession, for information regarding them, especially with respect to temperature.—S., JUNIOR.

[After its sojourn in the mansion the plant seems to have done very well. Well-ripened home-grown Bananas are much superior to imported fruits, which have to be cut in a green state.]

THE TUBEROUS BEGONIA.

THE tuberous Begonia has of late years become very popular, and deservedly so, considering its easy culture and the various uses to which it can be adapted. It is a charming plant for summer bedding, and I will treat on the culture of the plants for that purpose. Unlike many older plants which require so much house room and attention during the winter months, the tubers can be stored away safely until again needed. The present month is a suitable one for sowing seed if the plants are required for this season's bedding. Pans or boxes should be well drained

and filled with a compost of one half leaf soil, the remaining half sweet loam and silver sand, well mixed and finely sifted. Press it moderately firm and leave it quite level on the surface. Give a thorough watering through a fine rose can, allowing the soil to drain for a few hours, when seeds should be sown on the surface, taking care to scatter them evenly, or when the seedlings appear it will be detrimental to them if they are thickly placed. Cover the pans with sheets of glass and plunge them in bottom heat, shading them with moss or paper. Excessive evaporation from the soil is to be avoided, the object being to keep it moist and sweet so that the seeds will germinate quickly.

Subsequent watering must be done by holding the pans up to their rims in a tank or bucket of tepid water. In this way the water, ascending through the drainage, will moisten the soil throughout, and the seedlings will not be washed out of place. Gradually expose them to the light and air by tilting the glass, but shading from the sun will be necessary. As soon as they can be handled prepare other pans or boxes as before advised, and lift the plants carefully with a small forked stick, pricking them off an inch apart. Continue to keep them in a moist temperature of 65°. In the course of a few weeks they will be large enough to handle, and may be planted 3 inches apart in other boxes or potted in 60's. The soil should consist of loam and leaf soil in equal parts, with plenty of sand. Keep the plants close and shaded until growing freely, afterwards giving them more air and near the glass.

Much care and attention is saved by planting them 9 inches apart each way in frames, and when established giving more air and light shade during the hottest part of the day. They are much injured by drought, hence strict attention must be paid to watering. Gradually harden them, and plant from 6 to 9 inches apart, according to size, in beds of rich soil. When they have done blooming lift them with as much soil as possible, lay them in boxes, keeping each colour separate, and place in airy sheds to mature, ultimately shaking off the soil, removing the stems, and storing for the winter in shallow boxes, covering them with cocoa fibre. It is advisable to examine them occasionally when in flower, and those not true to colour should be lifted out or labelled, so that when used for bedding the following season they will not be mixed.—
NIL DESPERANDUM.

(To be continued.)



HARDY FRUIT GARDEN.

Planting Fruit Trees and Bushes.—Under favourable weather conditions—namely, mild, dull, and dry—all kinds of fruit trees and bushes may be planted with reasonable hopes of successful growth following. The really best period for planting is late October and during November, but through the occurrence of wet periods or other obstacles in those months the work may have been delayed. When that is so, advantage must be taken of every favourable opportunity that may present itself during the next few weeks.

The chief points of importance in planting are to carry out the work only when the soil is dry on the surface, and works cleanly. It is better to wait for these conditions, even if the planting is deferred later, than to carry out operations in soil that adheres to the tools. The roots of trees and bushes, of whatever size, ought not to be exposed to the air longer than is necessary to admit of jagged and broken ends of roots being pruned smoothly. All trees and bushes should have the roots laid-in in moist soil as soon as received from the nursery, and only lifted as wanted for planting. Endeavour to have the soil well prepared by previous trenching or digging, but not heavily manured. Ground enriched for a previous crop, which was not of an exhausting nature, is suitable for fruit. Soil that requires manure, owing to its poor character, ought to have it well decayed and thoroughly incorporated.

Make shallow but wide excavations for the reception of the roots, in which they can be spread out to their full length, placing them on slightly convex mounds of soil. Arrange the roots in layers, covering each with a little prepared soil consisting of loam and wood ashes, spreading it upon the fibres outward from the stem. Trees which will require support stake at once, protecting the bark from injury. Spread over the roots a layer of light manure.

Unless young trees are well furnished with masses of fibrous roots, and are transplanted with adhering balls of soil, shortening the branches must be resorted to, for a tree with an insufficient number of roots is not capable of supporting long branches. Hence it is necessary in such cases to prune back to strong wood buds. Trees with a small number of branches, and requiring more to furnish them well with a good foundation, must also be shortened, so that vigorous growths may push in the positions desired. Also, if the upper or terminal buds of Apples and Pears are flower buds, the shoots must be pruned back to wood buds for securing the necessary new growth. The pruning may be carried out when the buds commence swelling.

Planting and Pruning Raspberries.—The present is a suitable time to make fresh plantations of Raspberries. No crop should be expected from them during the present year, but the stools ought to be encouraged

to make free and strong growth in order that fruit may be produced abundantly the following year. The soil for Raspberries must be prepared deeply, and liberally manured in the course of digging or trenching, good half-decayed farmyard manure being the best application. Plant a trio of young suckers with bushy roots, in clumps a yard apart, in rows 4 to 5 feet asunder, the canes to be trained to stakes eventually. They may also be planted 18 inches asunder in rows 4 feet apart. A substantial trellis of wire 5 feet high must be fixed, to which the canes may be trained at equal distances.

It is desirable that all canes newly planted be cut down to within 9 inches of the soil. This prevents fruiting, but encourages growth. After the planting is completed, mulch between the plants with a layer of manure.

Preparing Soil for Strawberry Planting.—Ground intended for Strawberries to be planted this spring ought now to be well prepared. Spread upon the surface a liberal dressing of decayed manure, digging the ground deeply, and breaking up lumpy portions. If of a poor, shallow character the subsoil should be manured and loosened, but not brought to the surface. This may be best effected by bastard trenching. Soils of a very heavy or adhesive character are difficult to prepare without adding material of a lightening nature. Burnt refuse worked into the surface is very beneficial.

Established Strawberry Beds.—When cleaned and mulched in autumn Strawberry beds seldom require attention before the commencement of growth in spring, when the undecomposed remains of the autumn mulch may be raked off, and old withered foliage trimmed away. The soil will be better for a short period of exposure, after which apply a mulch of fairly fresh strawy material, previously cutting away withered foliage, and dressing round the crowns with soot.

Young Strawberry Plantations.—Hoeing between the rows of young plants in dry weather is the best cultivation which can be given at the present time. The process admits the air, assists in the pulverising of the soil particles, warming the ground, and releasing plant food. Growth is thus promoted, and the vigour of the plants insured.

FRUIT FORCING.

Figs.—Earliest Trees in Pots.—The trees set to work in November or early December for affording ripe Figs in April and May are sending out fresh roots plentifully, the bottom heat being kept steady at about 70° to 75°. Bring up the fermenting materials to the rim of the pots, and instead of allowing the roots to come over the top check them by placing pieces of good turf round the rims to induce plenty of fibres close to the stem and secure a sturdy habit. Provide moisture in the atmosphere by syringing twice a day and damping the paths as may be required in bright weather. Admit a little air at 70°, increasing it with the temperature; close at 75°, but lose no opportunity of maintaining a heat of 80°, 85°, or even 90° from sun influence, as that is very advantageous in the early part of the afternoon. Supply water abundantly at the roots whenever required, always before the trees are distressed for want of it, ever using a mild stimulating and sustaining food in thorough solution in it, and always weak and tepid. Let the temperature in dull weather range from 60° to 65°, 55° to 60° at night when the external air is very cold, but 5° more when mild. Disbudding will need attention as growth advances, and gross shoots require stopping, but the finest Figs are borne upon extensions. Shoots, however, should be pinched where necessary at the fifth or sixth leaf to prevent a straggling habit, but avoid crowding the trees with foliage, keeping them sufficiently open to admit light and air to every part.

Early Forced Planted-out Trees.—The trees started early in the year are progressing very satisfactorily, the night temperature having been raised to 55°, and to 60° or 65° by day from fire heat, with an advance from sun heat and free ventilation to 70°, or even 75°. Syringe twice a day as before advised, but in dull weather damping the paths with an occasional syringing will be all that is required. See that the borders are properly moistened. If the trees are weak, a thorough supply of liquid manure, not too strong, and tepid, will assist the growth and root action, which must be encouraged by surface dressings of rather lumpy material, but not thick, an inch or two thickness being ample.

Vines.—Eyes and Cut-backs.—Eyes may now be inserted, using pots, pans, or pieces of turf. Select firm, well-ripened wood, filling the pot or pan with sound friable loam, inserting the buds with a pinch of silver sand half an inch beneath the surface, plunging the pots in a bottom heat of 80°. Cut-backs should be placed in a house where they will have a temperature of 60° to 65° at night, and 70° to 75° by day. When they have started into growth shake them out and return them to the same size of pot, using good friable loam, providing a moist and rather close atmosphere until they are re-established, when they should have a position near the glass, so as to insure sturdy, short-jointed, thoroughly solidified growth.

Early House.—The Vines in flower must have a temperature of 65° to 70° at night, 5° less on cold nights, and Muscats 70° to 75°, rising 5° to 10° by day with gleams of sunshine. Keep the atmosphere somewhat drier by free ventilation, leaving a little on at night; yet a genial condition of the atmosphere must be maintained by sprinkling the floors two or three times a day during bright weather. Any shy-setting varieties may have the pollen distributed by means of a camel's-hair brush. Stop the laterals at the first leaf, and keep those pinched to one leaf throughout the season; but growths beyond the bunch may be allowed to make two or more joints, provided there is space for the full exposure of the foliage to light and air. Avoid overcrowding the foliage. It is better to reduce the laterals than retain them to the extent of crowding, retaining fruit

in proportion to the amount of foliage. Heavily cropped Vines make correspondingly little foliage, and the Grapes frequently do not colour because there is not sufficient stored matter for conversion at the time of ripening into the essential purple or gold colour. Reduce the crop when necessary so as to have some growth in the laterals, thus keeping the roots active, and thereby maintaining a good supply of nutriment judiciously applied as top-dressings or in liquid form.

Vines Started at the New Year.—The Vines are in leaf and showing for fruit; but let this be clearly visible before disbudding, removing the weak and least promising growths in the first instance, then give further attention when it is seen which shoots are likely to afford the best bunches.

Vines to Afford Grapes in July and August.—The Vines must now be started. They break most evenly and strongly when assured a moist genial atmosphere, therefore damp the rods three times a day, and sprinkle other surfaces. Avoid, however, keeping the rods constantly dripping with water, for the tendency in that case is to cause the emission of aerial roots, which are unsightly, if, indeed, they are not prejudicial in appropriating the stored-up food, which otherwise would be expended in the formation of roots in the border, or go towards invigorating the growth. A temperature of 50° at night, 55° by day, and 65° from sun heat is suitable until the buds begin to move. Bring the inside border into a moist, but not sodden, condition by repeated waterings, following with liquid manure if the Vines are weak. The soil has a strong affinity for the manurial elements, grasping and retaining them for appropriation by the roots as required. Afford outside borders sufficient protection to prevent chill, a little partially decayed material supplying all that is required. Eschew thick coverings of manure, particularly when likely to fall into a close soapy mass, giving preference to lumpy material, which will admit of the free access of air.

Late Houses.—The Vines being cleared of Grapes early in January, the borders top-dressed, and everything then put straight, a start may be made without much further delay, as it is essential that the Vines have the full benefit of the summer, and perfect their crops not later than the middle of September. Keep strong rods in a horizontal position, and insure an even break by sprinkling them occasionally. Let the temperature be kept at 50° to 55° at night, and on dull days, until the buds move, then allow 5° to 10° more by day, and an advance of 5° or more from sun heat, but lose no opportunity of ventilating freely.

Ripe Grapes.—Avoid fire heat as much as possible in the Grape room, admitting air to prevent an accumulation of moisture, replenishing the latter with clear soft water as required. An equable temperature of 45° is most suitable.

New Borders.—The compost for new or renovating old borders should be prepared; the top 3 inches of a pasture—rich, friable, and neither light nor heavy—is most suitable. Red soils are best—that is, those of the old or new red sandstone, as they contain iron, which influences the health of the Vine and the colour of Grapes. About twelve parts loam, two parts of lime rubbish, a similar quantity of charred refuse (termed wood ashes), one part of fresh horse droppings, and a tenth part each of crushed bones and soot—the bones by weight and the soot by measure—mixed, gave the best results we have seen in Vines, for both home use and market.

Provide a foot of drainage, rough at the bottom and road metal size at the top, placing on a couple of inches thickness of clean (free from pieces of wood) old mortar rubbish, and take care to have drains under for carrying off superfluous water. A width of 4 to 6 feet is ample to start with, and 2 feet 6 inches depth of soil suits the strong sorts, including Muscats. The materials will settle into about 2 feet depth, and the roots can be kept up by top-dressings. The proper or a good time to plant Vines is from the buds swelling to the shoots being an inch or two long, then shaking out and laying the roots out as straight as can be done without injury. Vines raised from eyes can be planted up to June, turf-raised being the best, but those in pots answer, only do not allow root-binding.

THE BEE-KEEPER.

LARGE versus SMALL HIVES.

IN bee-keeping, as in everything else, there are differences of opinion. This is an advantage, as it is not well for all to keep on the same beaten track and not make experiments. If we did so very little advance would be made. Before giving up our well-tried methods which have answered so well in the past, we should ask ourselves the questions, Will it entail more labour in the apiary? shall we obtain a larger surplus? and will it be as beneficial to the bees? This is of great importance, as our honey harvest does not last long, and whether the weather is favourable or not, the flowers will bloom in due season and fade away, and it is only those colonies which are in good condition that are able to store a surplus. This is observed more in an inclement season than when the weather is fine and bright the whole of the time.

For this purpose, which is the better? a large hive, or one of small dimensions? It is as well to understand the difference, as a correspondent lately condemned a hive of certain dimensions as being too small, whereas it was much larger than the hive recommended by him. A large hive when supered should contain at least 4500 superficial

inches of storage space, including the brood combs. The hive must be crowded with bees; not only a few stragglers on the outside combs, which an inexperienced bee-keeper would probably term a hive full of bees. If the quilt is only partly lifted from the top of the frames the bees at once boil over the sides of the hive; they are then in prime condition for storing a surplus, and it is surprising what a colony of bees of this description will do during the honey flow if the weather is favourable for only a few hours.

A small hive may contain 1500 superficial inches, less or more, a few inches either way is immaterial. It is sufficient for our purpose to show the vast difference existing between the two, and illustrates the necessity of giving the dimensions of hives, or the number of superficial inches of comb they will contain when full.

It is no uncommon thing to find hives still in use in many parts of the country as small as the above mentioned hive without any means of enlarging it. It is satisfactory, however, to learn from several correspondents that these small hives are doomed, and that the more rational system, as advocated in these pages, is being followed.

THE DOUBLING SYSTEM.

Having shown the difference between a large and small hive, we will explain the system of doubling, which has been mentioned on more than one occasion in these pages, and after another year's experience of this system, we are more than ever convinced of it being the best adapted for use in this country.

What is doubling? This may not be the best term, but it is the one most commonly used. The inexperienced, however, may be led astray by the word, as the hives are really not doubled in the sense that some bee-keepers may take it.

"Doubling" takes its name from the fact that another hive or box is placed on the hive containing the bees and brood nest. This hive, which may be termed a super, is of the same dimensions as the bottom hive.

The frames, all being of the standard size, are interchangeable one with the other. It is important that all the frames in an apiary be of the same size (not necessarily of standard size). There is then much less labour in the general routine of work.

To be successful in the management of bees the necessary work must be done at the right time. If extra room is required in a strong stock to-day it should be provided for them at once; not delay doing it for a few days, or it may be a week.

By the end of May, or a week or ten days later according to the weather, many of the hives will be crowded with bees, and be in good condition for doubling. We prefer doubling those stocks which are headed by a young fertile queen hatched the previous year. The middle of a fine day is the best time for the operation, as many of the adult bees will be on the wing, and it will be much easier to find the queen than when the bees are all in their hive. Examine each comb as it is lifted from the hive until the queen is found. The frame, with the queen and adhering bees, must then be placed on one side, care being taken that the queen is not shaken from the comb whilst handling it. An empty hive or a frame stand is a useful adjunct in an apiary; there will then be no danger of crushing the queen or bees.

Lift out four or five of the frames containing brood and place them on the top storey with the adhering bees, fill in vacant space with combs that have been stored away since the previous year, or with comb foundation, placing the frame with adhering queen and bees in the middle of the hive.

USING QUEEN EXCLUDER ZINC.

Place a sheet of queen excluder zinc over the top of the frames. This will keep the queen and the drones in the bottom hive, the workers only being able to pass through. The top storey may then be placed in position, and if the colony is a very strong one the empty space may be filled with clean old combs. These are tough and will not break down in the extractor, as new combs are liable to do. If the bottom hive holds ten frames, not more than nine frames should be placed in the super. This will allow them to be spaced wider apart, causing the bees to make the cells deep and more honey to be stored.

If the hive has not sufficient bees, and the honey flow is expected in three weeks, take a few frames and adhering bees from another colony, for preference one having an old queen. The frame containing the queen with adhering bees should be placed on one side, as advised with the other hives, and the combs and adhering bees placed alternately with the others in the top storey of the hive operated on. Being the middle of a bright day many of the adult bees will be on the wing, those on the comb will be chiefly young bees, and will not fight, and if quietly handled not a bee will be lost.

Bees at that season may be mixed indiscriminately by allowing them to remain on their own combs and placing them alternately with the bees in another colony. Some of the old bees will return to their old home, but many will remain in their adopted quarters.

It is impossible to make a colony of bees too strong at the time of

the honey harvest; more particularly is this observed when they are worked on full-sized frames for extracting purposes as above, as they are fully under command, and will store a surplus whilst weak colonies would starve.—AN ENGLISH BEE-KEEPER.

LARGE FRAMES.

ON page 113, "Warwick" says, "Will 'George Howdenshire' kindly inform one who is just commencing bee-keeping where to obtain the frames he mentions on page 70, 20 inches by $8\frac{1}{2}$, also the size of hive he would most recommend?" In the first place I may tell "Warwick" I am not the originator of the large frames: so far as I know they were made first in Scotland. If "Warwick" has the back number of this Journal for June 7th, 1894 (page 462), he will find it recorded that Mr. William Cowie had hives with fifteen frames 20 inches by $8\frac{1}{2}$, and two tiers of supers filled by the 31st of May. I do not know any dealer who sells these frames. The bee-keepers in this district either make their own or get them made by a local tradesman. What hive do I most recommend? I may state that several hives have been tried here—viz., the hive to take ten standard frames: Mrs. Simmon's hive that takes a frame 16 by 10 inches; the Scotch hive, as I prefer to call it, that takes frames 20 by $8\frac{1}{2}$ inches, and another that takes frames 18 by 9 inches. Of the two latter it is hard for me to say which I prefer, as the results have been so good in both cases. The only drawback to the hive that takes 20-inch frames is the large supers are not so easy to manipulate. However, to a beginner I do not hesitate to recommend the hive that takes twelve frames 18 by 9 inches. The hive to take these frames is $18\frac{1}{2}$ by $18\frac{1}{2}$ inside measurement, single eased, made of five-eighth wood if used in a bee house. Such hives do well in an outside apiary. Six miles from my home, in a good Clover district, three of us are interested in a bee house that holds twenty hives, arranged to face N., E., S. and W. The hives have single cases, are not so clumsy as some might think, and manipulation at all times is a comfort in this house. If "Warwick" decides on making either of these large hives, and wants more information, I should be pleased to give him correct measurements of both hives and frames.—GEORGE HOWDENSHERE.



All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Chrysanthemum Leaves Diseased (W. S.).—No. 1 leaves are infested by the Chrysanthemum leaf-rust fungus (*Uredo chrysanthemi*), which first appeared last year in this country, and was figured and described in the *Journal of Horticulture* the 21st of last October. The only means of riddance is to destroy the worst infested leaves by burning them; but yours are not so far advanced in attack as to render this necessary, therefore we should dust the plants very lightly on the under side of the leaves with a fungicide containing sulphate of copper, such as anti-blight, fostite, or others, using a bellows apparatus; or, if you prefer a liquid application, use sulphide of potassium, half an ounce to a gallon of water, dipping small plants or cuttings in the solution, otherwise spraying or syringing it on, the plants being laid on their sides, so as to wet the under side of the leaves. No. 2 leaves contain the irregular and shallow pustules of the parasite in its earliest form, but the spores are shed and many of the æcidia have not matured, the mycelium traversing the inter-cellular spaces of the leaves and destroying the tissues. This completes the life history of the fungus—first the æcidia form (*Æcidium chrysanthi*), then the uredo, or rust stage (*Uredo chrysanthemi*), and finally the resting form (*Puccinia chrysanthemæ*), all on the same host plant, or different members (in your case) of the varietal forms. Treat as above advised.

Propagating Aralias (Aralia).—You will find the information you require on page 71 of our issue of January 20th of the present year, or just three weeks ago.

Plans of Flower Beds (W. G.).—As you require beds similar to those in Hyde Park you cannot do better than choose such as you prefer as are figured in the book entitled the "Parks and Gardens of London." It can be obtained through a bookseller, or by post from the publisher, 12, Mitre Court Chambers, Fleet Street, in return for 2s. 11d.

Chrysanthemum Mrs. W. H. Lees (G. S.).—Mr. Molyneux writes: "To my knowledge this is the first time a sport has appeared on this Chrysanthemum. There need be no surprise at this, as any variety is liable to sport at an unexpected period. As yet the origin of sports is a mystery. By all means retain the sport, as being yellow it should be a valuable variety coming from such a good stock as that named, which, when in good condition, is one of the best of the Japanese section."

Improving Mossy Lawn (A. K.).—As the soil is of a stiff clayey character, perhaps it needs draining. If the lawn is small, and you can provide a mixture of three parts fresh loam and one part each of lime and wood ashes, to spread on a quarter of an inch thick, after well combing out the moss with a sharp-toothed iron rake, improvement would be certain to follow. The simple mixture used by Dr. Hogg was not for destroying moss, but for keeping the lawn in good condition, and in the field improving the herbage for stock. In the case mentioned on page 75, January 27th, of the moss being "burnt up," and a lawn of grass following, superphosphate was used at the rate of about 13 cwt. per acre.

Lime Water for Destroying Moss on Fruit Trees (Y.).—We have not found lime water thoroughly effective for destroying lichen and moss on fruit trees, but it acts fairly well when continued from year to year, yet not nearly as satisfactory as limewash, this having also a good effect on the land, as it scales off with the dead overgrowths, and thus profits the trees ultimately. A wash of sulphate of copper, 1 lb. to 25 gallons of water, with the same amount of freshly burned best chalk lime, slaked and formed into a wash before adding to the sulphate of copper solution, answers for destroying lichenous growths and preventive of fungoid attacks, applying whilst the buds are quite dormant in very early spring with a spraying apparatus. A very successful fruit grower has found the cost of 10s. 6d. per acre in using the caustic mixture you name a profitable investment.

Fungus under the Bark of Dead Trees (J. C.).—The specimen is the densely felted mycelial hyphae of the bark fungus (*Stereum acerinum*), which may commonly be found on the living bark of *Acer campestre* or field Maple in hedgerows, slowly but surely killing the affected plants. Probably the fungus does not or cannot attack quite healthy trees, but this is mere conjecture, as the trees are not noticed to be unhealthy until the parasite has got a good hold upon them and remedy is out of the question. We can suggest nothing but to clear away the infested trees, stubbing them, thus removing the cause of infestation. Whatever may be necessary to promote health in the trees, such as drainage, must be left to those cognisant of all the circumstances, but we found clearance of affected trees the only safeguard in a belt of Sycamore in a smoky district, this being regarded as the inducement to attack—namely, the impaired vitality of the trees.

Nectarines Losing Their Branches (K. J. J.).—The cause of the Nectarine trees losing the branches on one side one year, and dying on the other side the other year, is gumming. This is due to the growth of a fungus (*Coryneum Beijerinckii*) which destroys the inner bark, and encircling the branch cuts off the supply of sap, the part above suddenly collapsing. The excessive vigour of the new growths is abnormal, and the provocative cause is the pushing of the mycelial threads into the cellular spaces of the young wood, which is followed in due course by a ferment and exudation from the gummy growth, and the branch sooner or later dies. The only known remedy is to cut away all the gummed parts a few inches below where the exudation occurs, and train in young growths. As the spores of the fungus cannot penetrate short-jointed growth with thick elastic epidermal tissues, it is found that lifting those trees which make strong growth induces shorter-jointed and better solidified wood, capable of resisting the fungus and producing better crops of fruit. This we advise: Lift the trees carefully, cut away the diseased parts, if not all at once, as soon as others and healthier are produced to supplant them.

Worms in Tomato Roots (T. P. R.).—The "small worms" are myriapods—the familiar snake millipede (*Julus pulchellus*), which feeds for the most part upon dead or injured vegetable or animal substances. It, however, attacks the living fleshy roots of many plants, and even the crown growths, causing their decay or destruction. The "dry as dust" Tomato roots have been infested by root-knot eelworm (*Heterodera radicleola*), this pest being the cause of the warts on the roots and of the collapse of the plants. We should clear all such away, and burn every particle of root that can be got hold of, then seal the whole soil and walls of the bed with boiling water, thoroughly wetting every part in the completest manner, and if you take out the soil also seal the walls again, and the bottom of the bed. This will settle the eel worms which it reaches with or without phenyle (see Mr. Iggulden's article, page 76, January 27th), and the only further precaution will be not to reintroduce the eelworm with the soil or compost. If this be scalded before use there will be little danger of the enemy reappearing. For the millipedes use baits of Carrots, Parsnips, Mangolds, or Potatoes, preferably partly decayed, and when the animals are near the surface they can easily be scalded where there are no roots to injure, or the pests can be otherwise killed by crushing them with a knife.

Peach Buds Dropping (J. W.).—The shoots have some perfect and a number of defective buds, whilst many have fallen. All the defective buds have a dead central axis, there never having been any or very imperfect formation of the reproductive organs, and this simply accounts for the buds dropping. The roots are in most parts fairly healthy; but there is a minute fungus on some of the fibres, and evidently destructive to the bark, as this is dead as far as the threads or mycelium extends and quite sound elsewhere. The soil is of a very substantial character, and ought to grow Peaches well. The position certainly cannot be regarded as a good one, and the proximity of gasworks will not mend matters: but these obstacles cannot make the difference between an imperfect and a perfect blossom bud, for what suffices for one should for the other if sufficiently adequate for both. We have found lifting and firming the soil the best preventive, yet not always successful, or only for a time, then a dressing of the following mixture had a good effect:—Bone superphosphate, dry and crumbling, five parts; muriate of potash, three parts; sulphate of magnesia, one part; and sulphate of iron, half part, mixed, using 4 ozs. per square yard when the buds commenced swelling, and pointing or scratching in very lightly, afterwards using superphosphate only, a good handful (4 ozs.) per square yard at intervals of six weeks from the first leaves appearing till the fruit approached the ripening stage. Thus the trees had half a pound of the dissolved bone per square yard in addition to that given in the mixture, and with the lifting and otherwise careful treatment became healthy and fruitful.

Zygopetalum Mackayi (Novice).—Two systems, both of which have proved successful, are here given. They do not require frequent potting, and a slight rest after the completion of the growth is beneficial, reducing the supply of water; but never attempt to dry them, as is practised with some plants. One cultivator says, "Although Brazilian it makes grand growth in a cool airy house during summer. The largest growths we ever saw were made in a cool, moist, airy, and partially shaded Odontoglossum house. Everyone admired them, but they did not flower. The Mexican house temperature was next tried: 90° on hot days, no shade, no fire heat at night, when the temperature fell to 45° or 50° very often. So grown the pseudo-bulbs were smaller, the leaves shorter, and almost yellow rather than green, but the growths were sturdy and vigorous. Some gave two spikes, each spike bearing seven to nine flowers. A compost of fibrous peat, sphagnum, and broken crocks is most suitable, and abundance of water when growing should be the rule." Another cultivator remarks as follows:—"Ours are grown among Cattleyas, but it succeeds if managed like an ordinary cool stove plant. It is not particular as to compost, as we have it growing in peat, loam, and a mixture of both. Breaks on plants in all three kinds of compost or soils are producing a couple of spikes each. It is a free rooting plant, and requires plenty of root space. A strong plant with one or two breaks should have a 9 or 10-inch pot. When the pots are too small for the plants one spike from each break is the rule, and very seldom more than one break is produced from a lead, while under liberal treatment more spikes and breaks are common."

Names of Fruits. — Notice.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. (T. B., Leeds).—1, Probably a local seedling, worthless; 2, Dumelow's Seedling, also known as Wellington and Normanton Wonder, a good specimen; 3, Hoary Morning; 4, Leathercoat; 5, Winter Hawthornden; 6, resembles a Sturmer Pippin that has been gathered too soon. (P. R.).—1, Easter Beurré; 2, Bergamot Esperen. (S. P. F.).—1, Wellington; 2, Cox's Orange Pippin; 3, Braddick's Nonpareil.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (M. M. P.).—1, *Oncidium tigrinum*; 2, a form of *Cattleya Trianae*; 3, a *Cypripedium* insigne of no special merit. (A. R. F.).—1, *Tillandsia Lindenii*; 2, *Phanix dactylifera*; 3, a Fern, dead. (A. A. B.).—1, *Adiantum pubescens*; 2, *Selaginella Kraussiana*; 3, a variety of *Odontoglossum crispum*. (T. B.).—*Iris tuberosa*, the Snake's Head Iris.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. A. F. Barron, The Royal Gardeners' Orphan Fund, Chiswick, W.

COVENT GARDEN MARKET.—FEB. 9TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1 6	to 4 0	Grapes, lb.	1 6	to 2 0
Cobs ...	21 0	to 2 6	Lemons, case ...	11 0	to 14 0
Filberts, 100 lbs. ...	0 0	to 0 0	St. Michael's Pines, each	2 6	to 5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	to 0 0	Onions, bushel ...	3 6	to 4 0
Beet, Red, doz. ...	1 0	to 0 0	Parsley, doz. bnchs. ...	2 0	to 3 0
Carrots, bunch ...	0 3	to 0 4	Parsnips, doz. ...	1 0	to 0 0
Cauliflowers, doz. ...	2 0	to 3 0	Potatoes, cwt. ...	2 0	to 4 0
Celery, bundle ...	1 0	to 6 0	Salsafy, bundle ...	1 0	to 0 0
Coleworts, doz. bnchs. ...	2 0	to 4 0	Scorzonera, bundle ...	1 6	to 0 0
Cucumbers ...	0 4	to 0 8	Seakale, basket ...	1 6	to 1 0
Endive, doz. ...	1 3	to 1 6	Shallots, lb. ...	0 3	to 0 0
Herbs, bunch ...	0 3	to 0 0	Spinach, pad ...	0 0	to 0 0
Leeks, bunch ...	0 2	to 0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	to 1 9
Lettuce, doz. ...	1 3	to 0 0	Tomatoes, lb. ...	0 4	to 0 9
Mushrooms, lb. ...	0 6	to 0 8	Turnips, bunch ...	0 3	to 0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vita, var., doz. ...	6 0	to 36 0	Ferns, var., doz. ...	4 0	to 18 0
Aspidistra, doz. ...	18 0	to 36 0	Ferns, small, 100 ...	4 0	to 8 0
Aspidistra, specimen ...	5 0	to 10 6	Ficus elastica, each ...	1 0	to 7 0
Azalea, per doz. ...	30 0	to 42 0	Foliage plants, var., each	1 0	to 5 0
Cineraria, per doz. ...	8 0	to 12 0	Hyacinths, doz. pots ...	8 0	to 12 0
Cyclamen, per doz. ...	9 0	to 18 0	Lilium Harrisii, doz. ...	12 0	to 18 0
Dracena, var., doz. ...	12 0	to 30 0	Lycopodiums, doz. ...	4 0	to 6 0
Dracena viridis, doz. ...	9 0	to 18 0	Marguerite Daisy, doz. ...	6 0	to 9 0
Erica hyemalis, per doz. ...	9 0	to 15 0	Myrtles, doz. ...	6 0	to 9 0
„ gracilis, per doz. ...	6 0	to 9 0	Palms, in var., each ...	1 0	to 15 0
„ various, per doz. ...	8 0	to 12 0	„ specimens ...	21 0	to 63 0
Euonymus, var., doz. ...	6 0	to 18 0	Pelargoniums, scarlet, doz.	4 0	to 6 0
Evergreens, var., doz. ...	4 0	to 18 0	Tulips, various, doz. bulbs	0 9	to 1 6

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2 0	to 4 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Arum Lilies, 12 blooms ...	2 0	to 3 0	Mimosa or Acacia, bunch		
Asparagus, Fern, bunch ...	1 0	to 2 6	(French) ...	0 9	to 1 0
Azalea, dozen sprays ...	0 6	to 0 9	Narciss, white (French)		
Bouvardias, bunch ...	0 6	to 0 9	dozen bunches ...	2 6	to 5 0
Carnations, 12 blooms ...	1 0	to 3 0	Orchids, var., doz. blooms	1 6	to 12 0
Chrysanthemums, 12 bnchs. ...	8 0	to 15 0	Pelargonium, doz. bnchs. ...	6 0	to 9 0
Daffodils, doz. bunches ...	5 0	to 9 0	Roses (indoor), doz. ...	0 6	to 1 0
Eucharis, doz. ...	3 0	to 5 0	„ Tea, white, dozen ...	1 0	to 2 0
Euphorbia jacquiniiflora,			„ Yellow, doz. (Perles)	1 6	to 4 0
per bunch ...	1 0	to 2 0	„ Safrano (English), doz.	1 0	to 2 0
Gardenias, doz. ...	5 0	to 8 0	„ „ (French) per doz.	1 0	to 1 6
Geranium, scarlet, dozen			„ „ „ per 100 ...	5 0	to 7 0
bunches ...	6 0	to 9 0	„ Pink, dozen ...	2 0	to 3 0
Hyacinths (Roman) dozen			Smilax, bunch ...	1 6	to 2 0
bunches ...	4 0	to 8 0	Snowdrops, 12 bunches ...	0 9	to 1 6
Lilac (French), bunch ...	3 0	to 4 0	Tuberose, 12 blooms ...	0 6	to 0 9
Lilium longiflorum, 12 blms	4 0	to 6 0	Tulips, dozen blooms ...	0 6	to 1 6
Lily of the Valley, 12 sprays	0 9	to 1 6	Violets, dozen bunches ...	0 9	to 2 0
Maidenhair Fern, dozen			„ Parme (French),		
bunches ...	4 0	to 8 0	bunch ...	3 0	to 4 0
Marguerites, doz. bunches	2 0	to 3 0			



OUR PASTURE LANDS.

WE talk of the vivid green of our spring fields, and rightly so, but this year spring has come upon us so early, or, more properly speaking, we have had no real winter, that the fields are brilliant in colour, and, at the same time, well covered with herbage. So much so indeed, that it is a great temptation to give the order, "Turn out all the beasts for a few hours." No doubt they would enjoy the run, and the cool, pleasant mouthfuls of grass would be as refreshing to them as a crisp salad is to us on a dog day, or the first green Gooseberry tart in warm May sunshine.

Pleasant and beneficial as the outing might be to the stock, it would by no means be so beneficial to the pastures. Nature must have a resting time, and any herbage eaten now is sheer robbery. Frost must come sooner or later, and the coarser, tougher grasses act as protectors for the finer growths, and the patient man finds it pays him better in the long run to wait a bit before stocking his winter grass. Besides, too, the very verdure that pleases the eye betokens a certain amount of moisture in the turf, and much treading by stock is anything but desirable. Four hoofs make a considerable impression when multiplied by twelve or fourteen, and hoof marks destroy as much embryo grass as the industrious mouth.

Pasture land is often supposed to manure itself. All the manurial energies of the farmer are directed to his arable land. Of course this is perfectly justifiable; but if folks would only stop to consider a bit sometimes, they would come to the conclusion that even grass land, enriched with cattle droppings, might be benefited by a little attention. This attention need not always take the form of expensive manures—oh, no! We are not advocates of always draining the pocket. We do plead guilty to stealing a little time—a little horse power. We have often been struck with the fact that so few farmers think it necessary to spread the cattle droppings in the fields. We all know how coarsely the crop grows in any field where the manure heap has stood. If a corn crop, the straw is generally overgrown and rotten, having been laid some weeks before harvest; if a Potato crop, well, those particular tubers are by no means a good sample of the field. And it is just the same with the grass. It is almost smothered by the concentrated mass of manure, and then after recovery, which is a long process, the herbage is coarse and rough.

It may seem a fad, but a boy with a spade or hoe at 1s. a day could effect a great improvement and benefit. At any rate it would bring about uniformity. A party of industrious hungry fowls will do the work equally well, and ask no 1s. per day. The same remark would apply to molehills, unsightly in themselves, but so valuable as top-dressing. There is another form of cheap top-dressing obtainable in many places for leading, we refer to roadside scrapings. In these days of such activity on the part of road surveyors much good work is done on narrow roads by the ploughing out of about two or three farrows each side of the road. This material must be carted somewhere, and it forms an excellent and cheap dressing.

On most farms, too, are to be found banks formed of the deposit removed at great labour from the dykes. It is never carted away in the wet state for obvious reasons, but when thoroughly dry is well worth carting away to the nearest grass land. We were amused lately in reading remarks by a parson on the excellence of grass land adjoining the homestead that is always good. It is a case of first come first served, and the far-off pastures are often left to that more convenient season that never comes. In the corners of many fields will be found heaps of decayed vegetable matter, such as Potato tops, the residuum of the Twitch and Thorn burnings, all so good if only spread about.

We do not consider horses enrich a pasture much; their manure is among the least valuable, and therefore the horse pasture should receive a little extra attention. None of these little "tonics," if we may so term them, entail a heavy bill; they are all, as it were, home productions. Now we shall speak of a few resortatives that must be paid for in current coin.

One of the signs of the change of thought that comes with passing years we find in the fact that never, or hardly ever, are bones used as dressing for grass. Our fathers swore by them (we mean $\frac{1}{2}$ -inch bones, not the cooked varieties), and considered they were the one great need of grass land. *Nous avons changé tout cela.* Basic slag is the universal remedy recommended now, a substance which did not exist in our fathers' time and not till lately in our own. It has the merit of being cheap, and for some classes of grass land is most valuable, containing as it does a percentage of something like 17 of soluble phosphate. Unlike superphosphate, the benefits of basic slag are not so quickly exhausted, and on coarse rough grass the result is excellent. The quantity applied should be about 5 cwt. per acre.

For poor mossy grass (the moss denoting a deficiency of lime) we recommend a good liming. Lime destroys the moss and renders sour land sweet. Where lime has been applied a good plant of White Clover will generally make its appearance. For thin grass, liable to dry out in a hot season, a dressing of common salt will be found of value as tending to retain the moisture. Of course there are districts where lime is not very easily obtained; in cases of that sort we should advise the application of basic slag, as besides the valuable phosphoric qualities it also contains much lime. We are fully aware that we shall find many who will not agree with our remarks on the subject of giving our pasture lands a winter rest. Necessity, we know, is a stern mother, and many farmers are almost compelled to keep their stock out of doors during winter; but two wrongs never yet made a right, and the only case where we would tolerate winter grazing is the grazing of rough park land by hardy Welsh or Scottish cattle. The rough park can never be made really good grass, and the little Welsh and Scottish cattle will live and do well where a better class of stock only deteriorate.

WORK ON THE HOME FARM.

Where are we? Can it be true that we have not yet left behind us the winter quarter? The evidence of the morning paper is in the affirmative, but our lawn is showing symptoms of the urgent need of a mowing machine, and we really do not know where we are.

On the whole, and looking back to the lessons which experience has taught us, we suppose the calendar is the surest guide, and that we had better defer our sowings until the Ides of March, and direct our attention to spring cleaning. Now, in the household this is an operation that always involves an immense amount of dust, an article with which we do not make much acquaintance out of doors until March, but having the dust let us hie us to the cleaning.

Spring cultivators are making splendid work, and seem to be a greater boon than tying-reapers—at any rate, they have become universal in a much shorter time. Old-fashioned drags and cultivators are now almost unsaleable, and it is not surprising, for the new cultivators are useful for so many purposes, and for dragging out twitch they are unapproachable, the lifting action having such a wonderful effect in leaving everything light on or near the surface; a set of light harrows and a chain harrow to follow then soon complete the operation so well begun, and as much is done towards cleaning the land at one operation as under the old conditions often required three dressings to satisfactorily perform.

We have rolled our Wheat, but not harrowed it as yet; we have the kainit in the shed, and shall sow immediately, and then harrow the Wheat at the first dry opportunity. Larks did their worst, but the late-sown Wheat, thanks to the mild weather, pulled through, and now looks well. Woodpigeons are now the pest, and they are eating off the young Clover as fast as it grows. A raid has been organised, and every Wednesday afternoon for a month every plantation in the county will contain a loaded gun in the hands of a farmer sworn to exterminate as many wild pigeons as possible. Last year 1500 were killed, not a large number for a county, but much good resulted.

METEOROLOGICAL OBSERVATIONS.

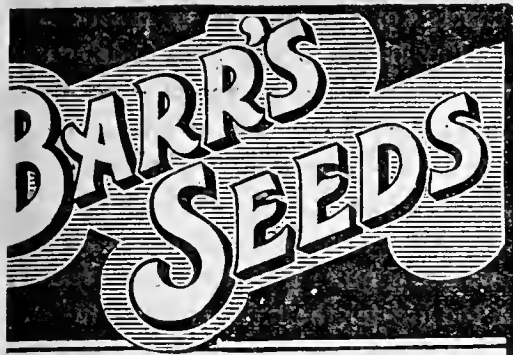
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1898. January and February.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.			
		Dry.	Wet.			Max.	Min.	In Sun	On Grass		
	inchs	deg.	deg.		deg.	deg.	deg.	deg.	deg.	inchs.	
Sunday	30	30·390	51·1	49·7	S.W.	42·9	55·0	37·5	57·1	37·1	0·011
Monday	31	30·387	47·2	42·3	N.W.	44·9	52·2	46·9	75·1	41·1	0·056
Tuesday	1	30·239	52·2	51·1	W.	44·4	56·2	45·3	66·9	37·6	—
Wednesday ..	2	29·807	44·1	39·1	W.	45·9	47·4	43·7	76·4	39·2	—
Thursday ..	3	30·055	39·2	36·6	W.	43·1	46·2	36·1	54·0	30·7	0·154
Friday	4	29·357	35·9	35·9	N.	42·8	38·1	35·9	53·6	35·6	0·036
Saturday....	5	29·846	32·3	31·8	N.W.	40·9	43·1	30·6	70·1	27·4	0·148
		30·012	43·1	40·9		43·6	48·3	39·4	64·7	35·5	0·405

REMARKS.

- 30th.—Mild, with high wind and a gale at night; slight showers early and between 11 A.M. and noon.
 31st.—Almost cloudless till 11 A.M., and brilliant throughout.
 1st.—Rain from 2 to 3 A.M.; fair early, bright sun from 9.30 to 10.30 A.M., then cloudy, and faint sun in afternoon.
 2nd.—Bright sun almost all morning, with high wind, but occasionally cloudy.
 3rd.—Mild, with alternate sun and cloud in morning; frequent drizzle in afternoon and rain at times; lunar halo in evening.
 4th.—Almost continuous light rain mixed with wet snow till noon; frequent sun in afternoon; clear night.
 5th.—Almost cloudless morning; sunny afternoon; fine night.
 Temperature still very high, but barometer lower and rather more rain —
 G. J. SYMONS.



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NS.	1 PACKET LEEK.
CARLET RUNNERS.	1 " MELON.
T BEET.	4 OZ. MUSTARD.
BORECOLE.	4 PACKETS ONION.
TS. BROCCOLI.	1 OZ. PARSNIP.
ET BRUSSELS	3½ OZ. RADISH.
OUTS.	1 PACKET SALSIFY.
TS CABBAGE.	1 " SCORZONERA.
T COLEWORT.	4 OZ. SPINACH.
CABBAGE SAVOY.	3 OZ. TURNIP.
ARROT.	1 PACKET TOMATO.
TS CELERY.	1 " VEGETABLE MARROW
T CAULIFLOWER.	1 PACKET THYME.
ESS.	1 " POT MARJORAM.
T CRESS, American	1 " SUMMER SAVORY.
Winter.	1 " PARSLEY.

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Journal of Horticulture.

THURSDAY, FEBRUARY 17, 1898.

THE JOURNAL OF HORTICULTURE can be obtained
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communications must be addressed to 8, Rose
Hill Rd., Wandsworth, S.W.

THE ROYAL HORTICULTURAL
SOCIETY: MEDAL AND OTHER AWARDS.

THOUGH prominence is given to the following
communication, it is not to be implied that
we are in full accord with all the propositions of
our correspondent, but rather because the whole
subject of making awards at the Drill Hall
meetings appears to merit greater consideration than
it seems to have received.

All members of these bodies have reason to be
grateful that the Council is presided over by a
gentleman of Sir Trevor Lawrence's good sense
and discretion. His graceful remarks, the moment
appealed to, of an arrangement with respect to
making awards at the Drill Hall meetings, so likely
to fail, showed at the recent annual meeting that he,
at least, fully recognises the services which the mem-
bers of these Committees render to the Society. It
was rather curious that the Fruit Committee should
have been the only one that in a body at the recent
Drill Hall meeting objected to the Council's order,
and this in the interests of the Society. However,
the President was evidently in favour of the sug-
gestion that each Committee should do as the
Floral Committee has done for several years—
appoint a sub-Committee to make the medal
awards to such exhibits as are entered to that
Committee.

But, after all, as the object of the Council is to
reduce the number of medal awards, will the
proposed sub-Committees be productive of the
Council's desired end? Judging by the Floral
Committee's experience I should say not. Did not
the mixed or hybrid Committee of the 8th inst.
make just as many awards as would the Committee
under ordinary conditions have done? Was that
the reason why these awards were kept from the
Press? or do the Council think, as I think, that
the publication of these medal awards in the papers
rather intensifies the craving which seems to exist
for them? I am not sure whether, except at the
great shows such as the Temple and Crystal
Palace, it would not be a good thing to publish
only the medal awards to gardeners or amateurs.

They have nothing to gain beyond the awards, and hence merit encouragement. But, at the same time, I say emphatically that every Fellow of the Society who visits the Drill Hall, ought to be most thankful to members of the horticultural trade for their splendid liberality in making the meetings so interesting and instructive.

Now I suggest that no medal awards whatever be made to trade exhibits at any Drill Hall meeting; but seeing that many members of the trade exhibit repeatedly, that at each meeting the sub-Committees making awards be authorised to give to each trade exhibitor so many marks or points apportioned to the merits of the respective exhibits, and that at the end of the year the Council award to the trader having the highest number a gold medal, providing also silver-gilt, or silver medals, in value relative to the number of points obtained for the year. No trader should be awarded the gold medal more often than once in five years, as that would give others a chance to win it also. With severe limitations placed at each meeting upon the space allotted to each trader, and upon the number of marks granted in each case, I submit that the result would be to secure in really competitive form a remarkable series of trade exhibits all through the year, which would serve to maintain the meetings in a high state of excellence. I can conceive of no other satisfactory way of reducing the number of medal awards; and as to abolishing them absolutely, I think that is an insane idea. With respect to certificate of merit awards, I still hold that no better or more practical proposal in the direction of reducing these has been yet made than mine, that none should be granted except by a majority of two-thirds of the members present.—A. D.

[We are not in the least surprised that the Council should view with some apprehension the generosity of the Committees in awarding medals and other high honours at the Drill Hall meetings. Last year it would seem that more than 400 medals were granted—namely, by the Floral Committee 264, the Orchid Committee 83, and the Fruit Committee 64. Did some of the members of the Council think that by a mixed medal committee of plantmen and fruitmen one would act as a check on the other? If so, why stipulate for twice the number of floral over the fruit experts, whereas these latter recommended the smallest number of medals? Moreover, the members of the Fruit Committee showed in the most practical way possible their willingness to meet the reasonable desire of the Council by supporting a proposal that high honours shall only be granted by a two-thirds majority vote. This certainly would have led to a diminution.

The proposal was not accepted, but in lieu of it an instruction was issued for the formation of a committee of nine, one-third of this number from the Fruit, two-thirds from the Orchid and Floral Committees, the nine members to go jostling against each other through all the departments for recommending medals, some of them knowing very little about Orchids, others little about fruit, and perhaps half of them not being up-to-date with florists' and other flowers and plants, yet all the votes having equal weight!

The scheme could never have been fully considered by the Council. It involves a breach of the principle that has been peculiar to the Royal Horticultural Society since the Committees were established—namely, that the honours awarded are determined by experts in each section, and it is this which has invested them with a weight far exceeding that of any honours which may bear the same name granted by any other society in the kingdom, and, perhaps, out of it. The principle in question is a cardinal and distinguishing feature of the R.H.S., which it is hoped will be maintained in its integrity. There can be no sounder line of action than that each Committee shall be responsible for its own decisions in its own special department, and a mixing of the three would in the very nature of the case be a weakening of all.

As to the examination of exhibits not placed on the Committee tables, but arranged in the body of the hall for display, it has been the custom for all the members of the Fruit Committee present to go round the hall in a sort of crush and scramble for examining the collections. Thoughtful inspection, careful comparison, and quiet

discussion on the merits and demerits of the produce is practically impossible under such conditions. Far better would it be to delegate three members from the Committee who rarely if ever exhibit, such as Messrs. Bates, Barron, Smith and others who have also had much experience in judging; let them have ample time for examination (just as in the case of judging the dessert fruit for the Veitch prizes), and the work would be well done. All persons who have had much experience in adjudication at shows know quite well that the greater the number of judges above three the greater the liability to confusion and mistakes. The plan of having an assemblage of all the judges at provincial shows to determine the prizes in certain important classes has been tried, found wanting, and almost, if not quite, in every case discontinued.

The principle suggested by "A. D." for the determining of medals is exactly that which is adopted by the National Amateur Gardeners Society and many other associations which hold periodical meetings, and it answers admirably, the cumulated marks determining the prizes at the end of the season. It is followed also at great provincial shows where medals are provided for meritorious non-competitive exhibits, only in these cases the prizes are determined at once, according to the number of marks the judges have recorded for the various exhibits. In no other way could the work be done so well. A very high number of marks indeed carries a gold medal; a reduced, though still high number, a silver-gilt; lesser, yet meritorious marks, silver medals, and so on. Awards which are based on carefully considered lines, and represented in figures, invariably give the greatest amount of satisfaction to all concerned—show authorities and exhibitors.]

RED SPIDER IN VINERIES.

It may be affirmed that in the whole routine of Grape growing, in certain localities at least, more worry, trouble, and injury arise from the inroads of red spider than from any other single source that can be named. Many have been the preventives and remedies which have been recommended and tried to combat the evil. In many cases the "cures have proved worse than the disease," at least they have not only been ineffectual but nearly as injurious as the pertinacious little pest. No wonder that a friend on being once asked how his Vines were doing, exclaimed that he was "sair hadden doon we reed speeder!"

It is the practice of many persons in order to prevent and combat the pest to regularly syringe the Vines with as clear water as can be had up to the time the Grapes begin colouring. The objection against this is that in numbers of cases the water leaves some deposit behind it, so that if it do accomplish the end in view it disfigures the berries, and no gardener or his employer likes that; nor does it always effectually accomplish the end in view—it simply displaces without killing the enemy, which seems cunning enough to get on to the upper surface of the leaves, and there it may laugh at the syringing.

Another, to me, objectionable evil attending syringing is that it drives the leaves out of their natural attitude, and the weight of water causes their footstalks to bend. Then unless the houses are carefully ventilated there is a danger of chilling the leaves—generally termed scalding—by rapid evaporation of moisture from their surfaces in a bright morning. Sprinkling surfaces with sulphate of ammonia is sometimes resorted to, but it is a ticklish process, and is seldom satisfactory. Various other remedies have been applied, such as sulphur mixed with hot lime, or painting the pipes with a mixture of sulphur and lime or soot of the consistency of paint. I cannot say that I ever saw any of them prove completely effectual, and for many years have not resorted to any of these appliances.

What I have found completely effectual, after having found out that there are two sorts of sulphur in commerce, is the application of one of these to the hot-water pipes, and applying extra fire heat for eight or ten nights consecutively. I do not think it is generally known by gardeners that there are these two sorts of sulphur. The one is flaky, something like fine powdery snow; the other like ashes, though much finer. The latter is the effectual kind, and is known as Sicilian or sublimated sulphur, which is used by manufacturers of tweeds and other woollen fabrics, and which drysalts generally supply. This was not applied in the usual way. The pipes were moistened, and so much dry sulphur put on them as could be got to rest on their upper part. Extra fire heat was then afforded as mentioned already, till on entering the vineries at night strong fumes of sulphur were felt. When the heat was rushed up to the desired amount it was then moderated, and in the morning either checked as much as possible, or the fire drawn off as circumstances called for.

The precaution necessary is never to begin this sulphuring till the Grapes are larger than the largest peas or nearing the stoning period, and are free from all danger of what is termed rusting. I never observed the least ill effect on the Vines from this treatment, provided it was not applied too early. Unless, indeed, that from over-moisture and improper ventilation, the under leaves of a Vine became warty. The warts became black. By the use of a pocket lens it is easily seen when all the insects are dead, and their eggs become black and vanish. Then the extra fire may be stopped, but the sulphur left intact. I have never once found this remedy fail in clearing Vines of red spider, and for many years I have seldom or ever syringed a Vine from the time they were fairly started till the fruit was all used; and I have had Hamburgs and other Vines keep their leaves intact without a blemish till they dropped off the pale yellow colour of Horse Chestnut leaves when ripe and falling from the trees.—DAVID THOMSON.

FAIR DEVON.

(Continued from page 83.)

It is remarkable how the principal species are found in colonies along these stone fences, and I have observed in some places from 50 to 100 yards of surface nearly covered with one sort, then another long or small space occupied with a different kind, and so on with perhaps half a dozen distinct forms in succession. Very rarely are they found mixed, and even species of the same genus appear antagonistic to each other, or at least do not associate. Amongst these colonies of one kind searchers may find some abnormal varieties, the crested and much-divided fronds of which render many of the forms of wild Ferns so extremely beautiful. But the explorer requires a keen eye and considerable patience to discover such departures from the types, and thousands of plants may be examined without observing the slightest tendency to anything unusual. Some peculiarity of conditions seems necessary to set up a variation, and even then it is rarely perpetuated in a state of Nature.

One of the most distinct, though it is not the most abundant of the Ferns that came under my notice, is *Asplenium Adiantum nigrum*, the Black Spleenwort, of which such large quantities of fronds are seen in Covent Garden Market as the "French Fern." It is a handsome Fern, the bright green shining fronds contrasting with deep purple or black stems, and it is one of the few which can be grown in both sunny and shaded situations. I observed some marked differences in the size of individual plants, accordingly as they were growing high up on the "fences" or near the base, and the dimensions differed, too, on opposite sides of the same road, the stronger plants being in the lower situations and shadier spots. Beyond this difference in mere size scarcely any variation was noted, though one closely allied to the finest of the abnormal forms, the beautifully crested *grandiceps*, has been found in Devonshire, the original variety being a native of Ireland. Another very peculiar and interesting variety of this Fern, *caudifolius*, which has the tips of the fronds and pinnæ terminating in long, curiously attenuated portions like tails, has also been found on Dartmoor. The Black Spleenwort is one of the easiest of our native Ferns to grow, and is admirably adapted for a rockery, where a light soil and well-drained, but not dry position, can be allotted to it.

The common Spleenwort, *Asplenium Trichomanes*, is largely represented on the "stone fences" of the Devonshire roads and lanes, and in one place particularly, in the neighbourhood of Tavistock, I remarked a length of wall of over 80 yards covered with this elegant little Fern, as even and regular as if they had been cast in a mould. The fronds, with their dark stems and small rounded pinnæ, radiating equally from the centre, have a unique appearance, like rosettes dotted over the surface and peering out of every crevice. It is one of the most constant of British Ferns, and very few variations have been found, chiefly of the crested type, with the tips of the fronds deeply divided; but it is a doubtful addition to the attractions of the species in this case. I have had plants of this Fern in pots in a cool house for years great and abundant, small pieces of stone suiting it well.

Blechnum spicant, the Hard Fern, occurs in colonies on the walls like the others, but is found in other situations as well, where the soil is moist, not too heavy, and free from lime. It grows freely and strongly, and the contrast between the tall fertile fronds with narrow pinnæ, and the shorter, broader, and more lasting sterile fronds, is very notable. For culture in pots or on rockeries it is one of the best. Variations are more plentiful amongst plants of this Fern than of the two preceding, and several have had their origin in Devonshire, or are found there as well as in a few other districts. One of the most distinct is *polydactylum*, which occurs in North Devon, and has the fronds divided into several portions at the tips. *Congestum* is a small compact variety found on Dartmoor, and *concinnum* is another neat

little Fern from Exmoor. Of other variations the crested forms—*cristatum* and *ramo-cristatum*—are graceful, and a "sporeling" from one of these named *glomeratum*, which forms a dense crested mass of growths in a compact globular form, is one of the most peculiar of all the British varieties.

Polypodium vulgare is abundant on the walls or "fences," but generally on rather higher and drier situations than the others, its slender creeping rhizome requiring little soil. Its even pinnate fronds vary but little in size and still less in shape as regards the majority of colonies, but the Cornish Polypody, *P. vulgare cornubiense*, must take its place amongst the most beautiful of the abnormal varieties of British Ferns; it has indeed been appropriately named *elegantissimum*. The fronds are very finely divided into small segments, until the original pinnate character is quite lost, and it could scarcely be recognised as a Polypody. It is a charming little Fern, and should be grown by all who admire graceful foliar form.

The Hart's-tongue, *Scolopendrium vulgare*, affords a wonderful study in variation, and there are Fern lovers in the neighbourhood of Sheffield and Manchester who have formed astonishing collections of this Fern. In the Devonshire roads and byeways it is very abundant in the lower positions where there is a greater abundance of light moist soil. Even in its simple forms the undivided straight shining green fronds are both distinct and attractive, but amongst the "crispum" forms, which have the frond margins undulated until they resemble green frills, some exquisite varieties have been either raised or found. Other types range from those with slightly crested or cut fronds to some so densely and closely cut up that they become almost moss-like, and bearing no resemblance to the original forms. *Conglomeratum* is one of the most marked of these, and is well adapted for pot culture. The Hart's-tongue is an excellent Fern for the base of rockeries or amongst old tree roots or stumps, and is always admired. Devonshire is so remarkably the home of Ferns that some excuse will be found for devoting this letter to a few of the most notable, but only the fringe of a great subject has been touched, a long holiday could be delightfully spent in searching for these natural gems.—VIATOR.

(To be continued.)

VEGETABLES FOR HOME AND EXHIBITION.

BROCCOLI AND CAULIFLOWER.

THOUGH these vegetables may be classed as near relatives, the former is the hardier in constitution, and the latter has the advantage in appearance and delicacy. Both in their season have an equal claim to popularity, and during recent years many acquisitions in the shape of new varieties have been introduced. These have had the effect of lengthening the season during which good Cauliflower and Broccoli may be produced, this end being reached by successional sowings and plantings. Like all other members of the family both are gross feeders, and a fairly strong soil, fed with good farmyard manure, and afterwards stimulated with a little chemical, are the conditions under which they thrive admirably. Plants that have to stand the winter must be strong and sturdy, and it is generally the ill-fed specimens that are the first to succumb. In generalities the culture of the two are similar, but in particulars they vary.

The first sowing is to provide heads for cutting in the autumn, and should be made in March and April, the former in a frame and the latter in the open ground. Robust growth is necessary from the first, therefore the seedlings must be thinned early and planted before they become crowded. If ground is not vacant at this period the seedlings should be pricked out and afterwards transplanted. The land ought to be enriched with good manure prior to planting, and the Broccoli dispersed at about 2 feet apart each way. If the planting can be done in showery weather so much the better, but if not applications of water must be supplied to give them a start. The best varieties for providing an autumn supply are Veitch's Self-protecting and Walcheren. Good Broccoli at this period is very acceptable, and it may be obtained by following the above methods.

Towards the end of April another sowing should be made, this time for winter Broccoli. Snow's Winter White, Vanguard, with a second sowing of Self-protecting, are good varieties for the winter supply; and as seasons, climate, and soils vary it is a good plan to commence planting early, and continue till sufficient have been put out. A third sowing should follow in May for providing heads the following spring and summer, and by this means a succession of the family is practically kept up through the year, as the latest of the Broccoli is closely followed by early Cauliflower. Leamington, Model, and Late Queen are good for the latest sowing, the latter being an excellent variety, frequently producing heads in June.

Numerous methods are adopted for the winter protection of Broccoli, though in mild seasons, such as the present one, it is not

necessary, and the finest crops are obtained from undisturbed plants. It is always well, however, to be prepared for emergencies, and one of the ways of protection is to heel in the plants on the approach of severe weather, with heads to the north, disturbing the roots as little as possible. By commencing at the north end of a row, and following the plants in succession, they assist to protect each other, and the work is completed without disturbing the roots to any great extent. Some growers adopt other methods, such as taking up the plants and storing them in sheds and cold frames.

The principles of culture applied to Broccoli are also suitable for Cauliflower, though being of a tenderer nature greater care is required in protection. In order to maintain a succession two, and in some cases three, sowings are necessary. The first should be made in February, and the seedlings from this one require some attention to prepare them for transplanting. Sow the seeds in boxes over gentle bottom heat, and when the plants begin to crowd each other they should be pricked into a frame in a bed prepared of old potting soil with a little spent Mushroom bed refuse added. The idea is to grow the plants sturdy, yet without a cheek, as this frequently causes "buttoning." By adding the manure from a spent Mushroom bed to the soil the plants lift with good balls, and when thoroughly hardened and large enough they should be finally planted on well prepared and manured ground. Water applied during dry weather will assist the plants considerably, as also does an occasional surface dressing of a chemical fertiliser. Good varieties for early sowing are Extra Early Forcing, Snowball, and Early London.

The second sowing should take place about the middle of April, this time in a sheltered bed outdoors. No overcrowding must be allowed, and the plants ought to be pricked out once before being finally transplanted. Ground as it becomes vacant from early summer crops is suitable for autumn Cauliflowers, of which Autumn Giant has no superior. Eclipse and Waleheren are also excellent varieties suitable for table or exhibition. Some growers make a third sowing in September, but with an adequate supply of Broccoli coming on this is not really necessary, as by sowing an early variety in January or February there is very little time lost. Autumn-sown plants will keep well through such a season as the present, but in a severe winter the matter is more difficult. The plants are often potted and stood in frames or cool vineries, and planted in their permanent quarters in the spring. There are certainly some advantages gained if good autumn-raised plants can be safely kept through the winter, as under favourable conditions the heads turn in early, to be followed in succession by the spring-sown plants.

The Cauliflower is a favoured vegetable on the exhibition board, and when in season no large collection could be considered complete without them. The season of a Cauliflower's perfection is short, as a good specimen to-day, especially in the summer, is over to-morrow. Would-be exhibitors should always cut the close heads early in the morning before the dew has evaporated from them, when they will be fresh and white. A moderate-sized, firm, white and crisp head is the best for the purpose, and as they are invariably shown in pairs, these should be as even in character as possible. Outer leaves are better removed, but beyond this too much trimming is not recommended. Quick unchecked growth is the secret of success with this plant, buttoning and other failings being the result of stoppage or wrong treatment. Surface culture of the soil is an important point that should never be overlooked, and during dry weather applications of liquid manure are of valuable assistance in stimulating growth and building up the plants. Always remember that it is the best-grown plants that produce the choicest heads, and these are obtained through no newly-found theory, but by doing everything thoroughly and at the proper time with the indispensable aid of the kindly conditions of Dame Nature.—GROWER AND JUDGE.

DIGGING AND TRENCHING.

SPRING *versus* WINTER.

YOUR correspondent, Mr. W. Pea, "confounds things that differ." If he will look at my remarks in the Journal of January 20th he will read, "After a long and varied experience my conviction is that the season to be recommended for this work, in order to realise the object named, depends entirely on the nature of the soil and subsoil, as well as on the rainfall of the district." I have no intention of entering any further on a wordy and rhetorical argument or controversy on this subject. I have given instances in which my contention has been proved beyond dispute by others whose experience and success has been well acknowledged, and this experience tallies with the laws that govern material things, which Mr. Pea seems to treat very lightly. I have had to deal with soils where the workmen had to dip their tools in a pail of water to make the next spadeful slip off it. It had been frosted and tumbled about for years to no purpose. It was turned into a tillage that would grow almost everything well, and was easily cropped, but by quite another agency.

Mr. Pea is quite correct when he says that soil holding more water in suspension has a greater shattering power exerted on it when frozen than

has one with less water in it. This is strong proof that my contention is right. The fact that the soil is thus rendered more porous gives it an increased capacity to hold the moisture. Hence you have prepared for yourself an aggravated condition of puddle to deal with, because after the melting of the ice the excess of water remains, and the greater the amount the longer the land of necessity remains unworkable.

Mr. John Roberts, Tanybwllch Gardens, in Wales, in writing in the "Garden" quite recently, under the heading of "Vegetable Growing Under Difficulties," says, "The operations of digging and trenching are left till early spring, and I wish to emphasise this, for so convinced am I of the advantage accruing from the practice where the rainfall is generally heavy, that I have adopted it for many years;" and he goes on to say that such labour in winter, owing to the wet climate, would be worse than useless, whereas he finds if the work be left till spring the ground is more friable and workable. I have before me a letter from Mr. Pettigrew of Cardiff Castle Gardens, in which he remarks, "I have read your paper on 'Digging and Trenching.' I quite agree with what you say. I have experienced it at Dumfries House, and Mr. Murdock, who, for forty years, was my predecessor, had the same experience." This was in a wet climate and on heavy ground. Another correspondent, in a letter received this morning, writes, "I have known scores of working men on strong land who would allow no one to dig it for them in winter if the work were done for nothing."

It rather startles one in these days of technical teaching to be told that "philosophy (in other words the laws of Nature) is one of those cheerful things which do useful fair weather duty, but comes to grief under stress of circumstances." Will Mr. Pea tell us one of these circumstances under which these laws have been proved to be inoperative? He may depend upon it they are "inexorable" in fair weather—and in foul, and let man do his utmost he cannot ignore them with impunity. They will—speaking figuratively—lay him in a trench if he attempts it.—DAVID THOMSON.

THE SHERWOOD £10 10s. SILVER CUP FOR ANNUALS AND BIENNIALS.

N. N. SHERWOOD, Esq., Master of the Worshipful Company of Gardeners, having signified his intention of giving a silver cup annually of the value of £10 10s., and having left to the Council of the Royal Horticultural Society the decision as to what it shall be given for, it has been decided to offer it in 1898 as follows:—

The Sherwood silver cup, value £10 10s., will be given to the exhibitor who shall obtain the highest total number of marks at the meetings in June, July, August, and September 6th of the present year for collections illustrating the suitability of annuals and biennials as cut flowers for decorative purposes.

The attention of intending exhibitors is particularly directed to the Society's "Rules for Judging," sections 160, 161, 169, &c.

Exhibitors may exhibit at any one or more or at all of the meetings during the months named. Marks will be given at each meeting, and the total announced after September 6th.

The contents of each tube (section 169) must consist of one variety only, but in addition to the flowers shown in tubes an exhibitor may set up at each or any of the meetings not more than three plain glass vases containing an assortment of varieties and kinds arranged for effect—all stalks touching the water or sand. The vases must be provided by the exhibitor, and must not exceed 6 inches in diameter, and may be filled with water or with wet sand at exhibitor's pleasure, always remembering that the clearness of both water and glass is a distinct point of advantage in decorative vases.

Notice of intention to compete, and space required, must be sent to the R.H.S. Secretary, 117, Victoria Street, at least the Thursday before each meeting.

The details given on page 48 of the Society's "Arrangements, 1898" (above quoted), do not appear to some people sufficient, and various applicants have asked the following questions, which, with their answers, the President and Council would be greatly obliged by your kindness in publishing for the information of others.

Q. "The contents of each tube must consist of one variety only." Am I to understand that *Coreopsis grandiflora* and *C. Drummondii*, or *Nasturtium Cloth of Gold* and *N. Crimson King*, and so on, may not be exhibited in the same tube? A. They may not.

Q. Are the tubes "not to exceed 3 inches diameter at the top side?" A. They must not exceed.

Q. "The vases must be provided by exhibitors, and must not exceed 6 inches in diameter inside." Does this apply to the "plain glass vases" only? A. Yes. The tubes must not exceed 3 inches nor the vases 6 inches.

Q. Who provides the tubes? A. Exhibitor, unless he is content with the stoneware jars the Society provides at all times.

Q. Will Regulation XI. be enforced? "All specimens must be the bona fide property of and grown by exhibitor." A. Yes.

Q. Must each exhibitor stage—i.e., arrange—his own exhibit, or may he call in professional help? A. A special person may not be procured for this special purpose. The exhibitor or his gardener, or some member of the family of either, must arrange the exhibit.

Q. Can the exhibit be repeated? A. Yes.

Q. Will other foliage be allowed? A. Only the foliage of the variety itself.

Q. May Grasses be mingled with flowers? A. No.

[We hope all is clear now, and some charming exhibits may be expected.]

*LÆLIA ANCEPS OWENIANA.*

THIS handsome form of *Lælia anceps* received an award of merit from the Orchid Committee of the Royal Horticultural Society on December 13th, 1892. At that time we gave an illustration of the flower, and this we reproduce at the request of "D. B. C.," the issue of that date being out of print. It was exhibited by Mr. Owen, Selwood, Rotherham, and was described as follows:—It is a very distinct variety, and attracted much attention. The sepals and petals are of a brilliant rose colour, paler at the base, and with white patches. The lip is a rich magenta, the yellowish throat being streaked with the same colour.

DENDROBIUM SPECIOSUM HILLI.

MAY I be allowed to say a few words in praise of the much-maligned *Dendrobium speciosum Hilli*? I remember, some four years ago, buying a fine specimen plant of this Orchid at Protheroe's Auction Room, when a friend, a well-known Orchid chief, who happened to be standing by, laughingly exclaimed, "Oh, you have bought that brute, have you? I wish you joy. I have grown it for years, but never a prospect of its flowering."

My plant has been now a fortnight in bloom, with some sixty yellowish-white flowers, on three gracefully drooping sprays, each over a foot in length, its lovely, delicate appearance, grouped among Orchids of varied colours, amply repaying me for having to wait so long.

My treatment has been that always recommended, but last autumn I adopted quite a kill or cure system, leaving the pot out under a north wall until the end of November, and giving no water; then I introduced it into the warmest corner of the Cattleya house, and liberally treated it with Beeson's plant food, the pot then being full to bursting with roots. Under this heroic treatment the long dormant terminal buds began to show flower almost directly, with the successful result above mentioned. I thought some of your readers might like to know the success of my treatment of this really beautiful, and especially in the structure of the blossoms, interesting Orchid.—HEREFORDSHIRE INCUMBENT.

DENDROBIUM NOBILE.

THERE is not a more useful Orchid in cultivation than this grand old species, the very worst of forms flowering freely and making a fine show, while some of the better forms are among the most rare and beautiful in collections at the present day. The plant is far too well known to need anything in the way of description. Its culture is easy, and although it is neglected and ill-treated in many places to such an extent that the specimens are ruined in appearance, the fact remains that with ordinary care and a suitable house they may be successfully grown over a large number of years, and rapidly increased in size and numbers.

It will grow well in any moist and warm house, such as a vinery or Peach house in work, a plant stove, or even in Melon and Cucumber houses; while where Orchid houses are at command it thrives well in the compartment devoted to East Indian plants generally. A long season of growth is needed, plants just now starting from the base requiring until July or August before the terminal leaves appear and the pseudobulbs—or stems—swell up. As soon as the top leaf is fully developed the plant should be taken from the heat and moisture and placed in a cooler, rather drier, and very light house, there to be exposed to every ray of sunshine possible, with a view of hardening and consolidating the growth and preparing it for the winter rest.

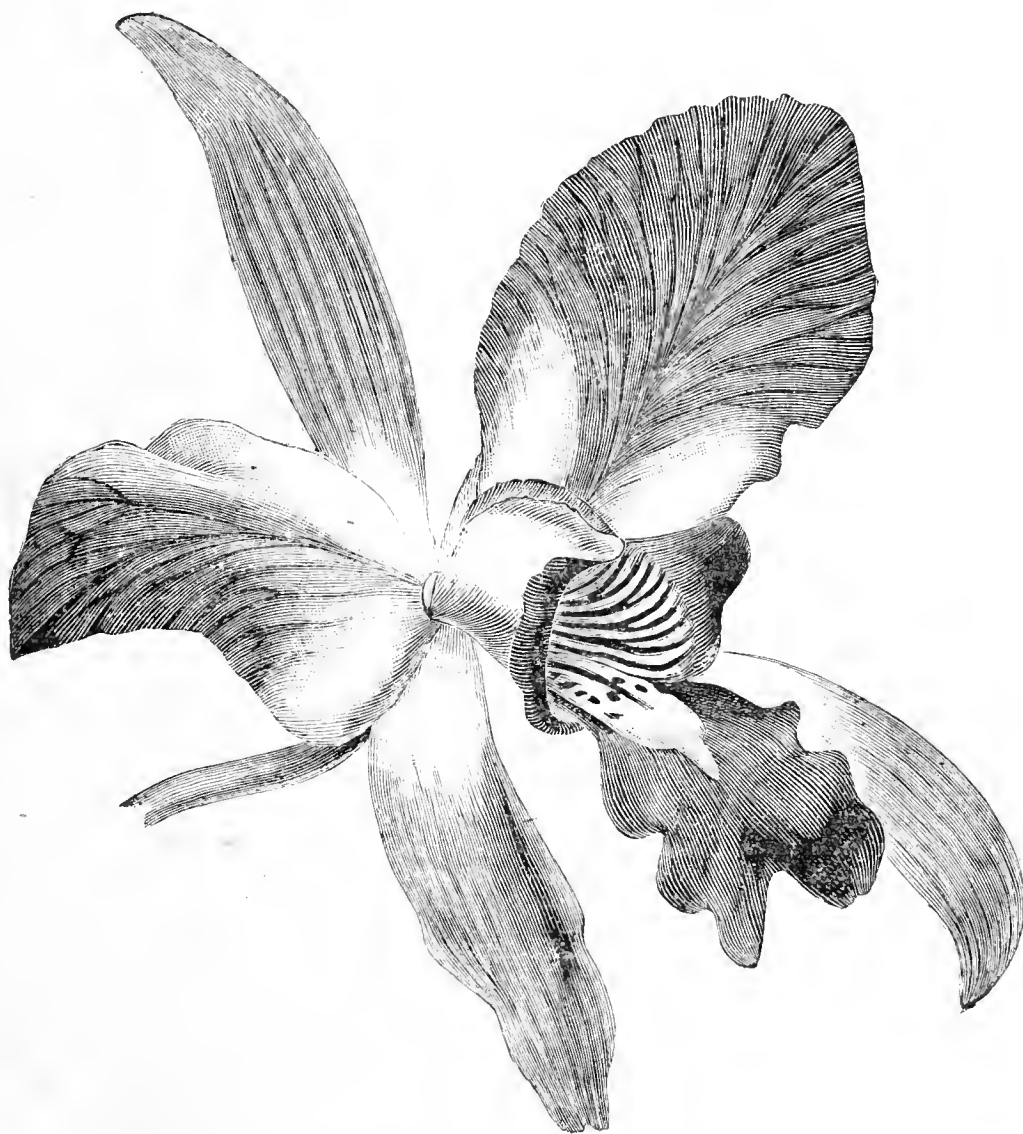
D. nobile differs from many other of the popular *Dendrobiums*, in that it is not strictly deciduous under cultivation, whatever it is in its natural habitat. But it is certainly different from the evergreen kinds as generally understood, and including such as the *densiflorum*, *thyrsoflorum*, *Farmeri*, and similar types in its habit; and whereas some of these retain their foliage over a very long series of years, that of *D. nobile* always falls in the second year. It likes as long and complete a rest as possible, and for about three months may almost be left alone as far as watering is concerned; but this only applies to well-ripened and hard plants, as green unfinished stems would shrivel badly if much dried.

In late winter the buds appear at the nodes all along the stems, and though they may be placed in warmth with due care, it is not wise to hurry them much, this leading to growth being produced

instead of flower, especially on unripened plants. Just at this period they require careful watching, as slugs, woodlice, and other small insects are fond of eating the young soft buds, and thus a season's work is ruined. The roots should be kept slightly moist, but not overwatered; and care is necessary that the young shoots, which often start at this time of year, are not wetted, as these are likely to damp off, and thus weaken the plants by making them dependent on back breaks.

The best time to repot is as soon as possible after flowering, and not long after this, as a rule, the young shoots commence rooting on their own account, this giving them a good hold on the new compost. The best material to use is equal parts of peat fibre and sphagnum moss, and though many cultivators are apt to recommend bones and manures of various kinds, these are far better left alone by the beginner in their culture. Plenty of rough crocks and charcoal may be added to the material named above; the drainage must be carefully laid and protected, but beyond this nothing else is necessary to produce capital results. I have had as many as forty blooms from a single pseudobulb from young plants grown on from eyes, and this without manure of any kind, either in the compost, or used as a liquid.

The plants may be grown in pots, baskets, pans, or whatever is convenient, the one thing necessary being a well-divided medium that air and water pass rapidly through. After repotting, a little care in watering is well repaid, as the roots are apt to die back in a wet com-

FIG. 21.—*LÆLIA ANCEPS OWENIANA.*

post; but when these have again obtained a good hold of the material, few plants require more water, this being kept up until the bulbs are fully developed. The undermentioned are a few of the best varieties of this favourite plant, and all are first-rate kinds that make a welcome change from the type, and thrive under very similar conditions.

Albinos of well known species are usually rare and expensive, and the white *D. nobile* is no exception to the rule. It is quite a novelty, having appeared in an importation of plants by Messrs. Sander last season. Before flowering it passed into the hands of a well known grower for market, but I believe it was repurchased afterwards by Sander & Co. The flower is of the purest white, with only a faint yellow tinge on the lip, and as only one small plant appeared it is likely to be rare for some time unless it again turns up. It is named *D. n. virginale*, and is quite distinct from such kinds as *D. n. albescens*, *D. n. album*, *D. n. Amesianum* or even the beautiful *D. n. Ballianum*, all of which show in greater or less degree the purple tint on the lip as in the type form.

Quite a different thing is *D. n. Cooksonianum*, which in addition to the purple blotch on the lip has this repeated on the petals. It first appeared at Heathfield House, Gateshead, and thus obtained the name of *Heathfieldianum*, but is now almost universally known as *Cooksonianum*. The deeply tinted *D. n. nobiliss* is a rare and beautiful form, quite distinct from all others, and one of the rarest. Its nearest affinity is *D. n. Sanderianum*, another very deeply coloured and good variety. *D. n. pendulum* is not common. It has pendulous stems, consequently it makes a good basket plant; the flowers are of various tints. *D. n. Wallichianum* is a tall growing fine form, not so good as the rare kinds mentioned, but quite superior to the ordinary type. —H. R. R.



THE ROSARIAN'S YEAR BOOK.

THIS welcome annual has been in the hands of many rosarians for some few weeks, but lovers of Roses generally may well possess it. All who know the Rev. J. H. Pemberton will heartily endorse what the Editor says about him. A more competent judge cannot be found, nor one more closely acquainted with our old-fashioned and garden Roses. We have few—very few—such *bonâ-fide* and energetic amateurs as the Revs. J. H. Pemberton and A. Foster-Melliar, who it is believed personally do all but the digging and hoeing to their Roses. Nor have we more reliable contributors to Rose literature.

When we quote from the Editor's opening chapter that the Rev. J. H. Pemberton "has gained the challenge trophy three times, been placed second six times, and third three times, but never out of it altogether; that he also staged for the Jubilee trophy nine times, gaining it four times, placed second three times, and third once," and that he was the first to re-introduce our single and semi-doubles of long ago, it is self-evident we have here one of our very foremost authorities, amateur or otherwise, and his portrait forms an appropriate frontispiece to the "Year Book."

Miss Grahame's short paper is so true to life that one almost fancies oneself once more busily engaged in the trials and hurry of staging. What a great difference there is in some in this respect! The cool and methodical man gets on and does treble the work accomplished by one who fumes and flurries because every official or assistant is not at his immediate beck and call. He cannot for the life of him call to mind the name of a certain Rose, and yet is perfectly conversant with it. Incessantly changing and re-arranging his flowers, even in a twelve or eighteen, and, after all, goes round when judging is completed only to find, not a first or second prize, but "disqualified for duplicates."

Several of such cases were seen during the season of 1897, and not the least guilty of these are some of our old exhibitors. Many, too, will re-arrange a bloom and not shift the name label at the same time; the consequence is that two blooms are incorrectly named. A box of twenty-four has been observed with no less than eight Roses wrongly named, simply through this hasty re-arranging of four blooms. Several old hands will take their Roses unnamed (except in the case of a few new varieties), select the best twenty-four—or whatever the desired number—when they arrive, and quietly write the names upon the spot.

This is no doubt an immense advantage, for however nearly they may be staged at home there are certain to be many alterations. Besides, to write so many names at home makes it very confusing to find the right one when finishing the staging. The necessary number being written just at the last is a great safeguard against duplicates. The remarks on the provoking watering-can, and the greetings from friend to friend, are delightfully pithy.

There is an exhaustive paper upon "Yellow Roses" from the Rev. A. Foster-Melliar. It is very evident that *Maréchal Niel* behaves better in the open with this amateur champion of Tea Rose growers than with the majority of us. Many persons will agree with him respecting the so-called White *Maréchal Niel* being a misnomer, as has more than once been indicated in your pages.

The great necessity of more careful selection of buds when propagating Roses cannot be passed over, and it is not surprising to find so high an authority alluding to it so strongly. Unless we continue to work from the strong shoots of many of our climbing sports from those of only normal growth, much of the progeny is apt to revert to the normal type. More than one case has been observed where a Rose has greatly deteriorated from this promiscuous selection of buds; so much so that the same variety, one taken from the nursery and the other from an enthusiastic amateur's home-raised stock, could scarcely be recognised as the same. In the first case every available bud was used, whereas, a very few only being wanted in the second, the best were selected.

Quite a heated argument took place last year at one of our large Rose shows in which the writer joined. Some declared a certain Rose was of

no use, and certainly would not find a place in their collection; while another extolled it as being among the very best we had. All were speaking from experience; but the first had purchased from trade growers, who wished to make every piece into a plant as soon as possible; the other had been privileged to receive a plant from the raiser, consequently his was of the best strain—if such a word may be used in this connection—while the others had, unfortunately, got hold of weaklings propagated from weaklings. This is an interesting subject, deserving of more attention than it has generally received. The allusion to the great desirability of more prominent and numerous stamens in the case of single Roses is very apt.

The Editor's exhaustive paper upon "The Rose and the N.R. Society for 1897" brings the whole of the past season and its pleasurable, as well as its few unpleasant incidents closely before one again. All who enjoy the acquaintance of the genial veteran, exhibitor or not, would sadly miss his presence at our shows, while his happy as well as instructive writings for so many years have been welcomed by thousands. The expressive hope for future pleasant meetings at the end of his paper will be echoed by all.

There is an interesting "Chat about Rose Sports," from Mr. A. Piper, in which we once more find that there is nothing new under the sun. The grand new Tea, *Muriel Grahame*, it appears, originated with him upon a *Catherine Mermet*, and a considerable number of plants had been propagated, when Mr. R. Harkness recognised it in the autumn of 1895, before the Rose was distributed by the celebrated Irish firm. Mr. Piper also notes a further instance of *Souvenir d'un Ami* sporting that beautiful white form of *Souvenir de S. A. Prince*, thus making three authenticated cases of practically, if not actually, simultaneous sporting of this one variety. It is pleasing to note that in neither instance would Mr. Piper distribute when he discovered that similar Roses had already been named, if not sent out. We have far too many duplicates. Other instances are given.

It is pleasant to read the Rev. D. R. Williamson's very favourable opinion of our British-raised Roses as being so suitable for the south-west of Scotland. For that matter, will not the majority of our home-raised Roses grow anywhere almost? and are they not among the very best we have? Newtownards, Waltham Cross, Cheshunt, Shepperton, and other places have given us some grand acquisitions of a hardy nature.

Mr. G. Paul's opening remarks upon ninety-six trebles at Birmingham called to mind that for seventy-two trebles at Brighton, about twenty years ago, a class that exhibitors will not easily forget, especially those who had the task of setting up the blooms, and one who failed to get the "Ashbury cup" by six points was not the happiest man in the world that day. It is a pretty idea, that mentioned by Mr. G. Paul—viz., "A bud, a flower half open, and a fully expanded bloom, so as to afford the public an object lesson of the variety in its several stages." It would be interesting to see this carried out, in spite of the evident irregularity that would inevitably result. Mr. G. Paul has had very great experience in exhibiting Roses, but everybody will not agree that an "equilateral triangle" lacks grace, when we see such uniform stands; always provided the flowers are even throughout, stands of triplets are decidedly imposing. There is surely opportunity for taste in arrangement here as well as where more or less flowers of any one variety are associated. Mr. G. Paul's novel suggestions might well be carried out, as we ought to have something fresh in the way of attraction each year if possible.

"A really good Rose year" is Mr. E. Mawley's opinion of 1897, and no one takes closer note of these seasons year by year than does the hard-working Honorary Secretary of the National Rose Society, whose opinions are made doubly valuable from the fact that he was last year President of the Royal Meteorological Society. To follow through his most interesting record of the past year, month by month, is instructive, while the meteorological observations at the end are by no means the least interesting portion of this annual, which should be in the hands of all rosarians.—EXHIBITOR.

SEASONABLE HINTS ON FLORIST FLOWERS.

IN the beginning of February we generally say the worst of the winter is over, and we may begin to think about our spring work; but this year we have as yet had no winter, and, in fact, the season has been the most remarkable on record. I am writing now of East Kent, where we have not had a flake of snow or any frost worth speaking of. This has been accompanied by generally high temperature and absence of rain. Our springs have not yet risen, the wells on the more elevated portions of our neighbourhood being quite dry, and the cottagers have to go some distance to get water; and yet one reads that in Glamorganshire and Devonshire there were 14 or 15 inches of rainfall in the month of December, while we had but 3.19, and in January only 0.47, not quite half an inch. As yet February gives no indication of earning its title of "fill dyke," and I think we cannot but look forward with some degree of apprehension. We see signs of growth in all directions, and wonder whether the poor things which are now showing themselves and pushing through the ground will receive a rude shock. It has, of course, affected our florist flowers in frames as well as things out of doors.

AURICULAS.

I am afraid grievous disappointment will await the growers of these flowers, for there has been a very large percentage of winter blooming,

and wherever this has taken place all hopes of a good truss from the same plant are at an end. There has been little damp to contend with, and the plants now look well and strong. We used to be very particular about this time as to top-dressing, but that has been almost abandoned, as the more accurate knowledge of the condition of the plants proved it to be unnecessary—the truss has been already formed, and therefore any fresh stimulus was not required. Those who admire big trusses and large flowers may perhaps be inclined to give some liquid manure, but I have always deprecated anything which would interfere with that refinement which forms one of the chief beauties of the Auricula. Little need now be done but taking away all dead foliage and seeing that the plants are free of aphides. Air should be given now on all favourable occasions, and as the plants begin to push they will require more water. Good ventilation and freedom from damp are the two points on which most stress should be laid at this season.

CARNATIONS AND PICOTEEES.

The great change which has taken place with these beautiful flowers still continues, and while in some respects one regrets it, I do not think it can be wondered at. Visitors saw at our exhibitions grand stands of beautifully marked and regularly formed flowers, and they were captivated by the brilliancy of the scarlet bizarre or the delicate edging of the rose Picotee. They must have them and try to do the same. But, alas! although their gardener might grow them successfully, they found that the flowers were not regular, and had nothing of the symmetry that they had admired, and they then found the grower who wished to succeed at the exhibitions must not only be able to grow them well but to dress them. Some petals had to be taken out, and the whole regularly arranged so as to present the appearance so much desired. The gardener naturally thought this beneath him, and the time required would be much more profitably spent on other things. Then came the border varieties and the yellow grounds which Mr. Martin R. Smith, Mr. Douglas, and others have succeeded in raising; they comprise all shades of colour, and are vigorous in growth, and free blooming. Ladies especially delight in them, because they are so good for cutting, so fragrant, so floriferous, and so to a great extent they have ousted in many instances the delightful varieties which were so prized sixty or seventy years ago, and when I have known as much as £2 2s. to be paid for a pair.

There are some growers who make up their beds of these in the autumn, and of course this year they have had an exceptionally good time. I have always maintained, however, that it is best to keep them in pots during the winter. My small collection looks very well; the plants are vigorous, and there is no sign of black spot or mildew amongst them. They will now require looking over, all dead leaves to be taken away, and the surface of the pots stirred. I shall shortly remove mine from the pit where they have been wintered to a more open position, where they will be sheltered from wet, but fully exposed to the air, and in this position they will remain until it is time to plant them.

GLADIOLUS.

It will be rather too soon at present to think of planting the corms, but I notice that some of mine are sending out shoots, and these I shall therefore put into small pots and place them somewhere where they will be free from frost and ready for planting when the proper time arrives early next month.

PANSIES.

These, too, have had a good time in the open, but I am afraid that in the South of England they are not so much in favour as they ought to be. Our climate is too dry, and they seem to rejoice more in the North of England and in Scotland than with us. One well known Scotch firm has, however, begun to cultivate them in the northern part of our county, and if it succeed it will be an encouragement to others to try. I grow a very few in pots, but those who cultivate them in this manner must now see about repotting, using a good mixture of loam, leaf mould, and well decayed manure, with some sand. Here, too, the same change of taste has occurred; the old florist type has now nearly gone out of cultivation, and the Fancies hold the field; they are bold and decorative looking, and are more robust in constitution than the older kinds.

RANUNCULUS.

The ground is now in such splendid order for these that the sooner they are planted the better. The beds have been already prepared, and a dry day is all that is necessary. They should be planted in rows 5 inches apart, 4 inches in the row, and about 1½ inch deep. The one great trouble at present arises from worms, which have an unpleasant way of turning the roots over and throwing them out of the ground. They should be closely watched, and where they are found so served replanted. A little firmness in planting will probably prevent a good deal of this style of injury; it is a great pity that the Dutch florists seem to have lost sight of the old kinds. The beds should be kept clear of weeds, but nothing more will be required at present.

ROSES.

One can hardly as yet say what the result of this wonderfully mild season may have on the prospects of the Rose grower; but at present I have on my wall shoots of Fortune's Yellow 2 or 3 inches long. I do not think, however, as far as I can judge, that those which are in the open are moving more vigorously than one could wish. Of course the most essential thing now is that of pruning, for on this, in a large measure, depends the future well-being of the Rose garden. It is an operation that requires to be carefully and intelligently performed, and it is one which, I think, in most instances, the grower will himself see to, as the special characteristics of the plants will have to be noticed. Hybrid Perpetuals are generally the first that require pruning. The distinction between strong and weak

growers must be carefully observed, as the former require much less of the knife than the latter. Teas may be left for awhile—indeed, it is hardly well to begin the pruning operation before the end of the month or the beginning of March, and the Teas certainly not until a month later, and should severe weather come on, it will be better to postpone it still further, and after this excessively mild season we may, perhaps, have to experience a very cold and trying spring.—D., Deal.



WEATHER IN LONDON.—The mild weather still continues, and save for a light frost on one or two mornings of last week, and a little snow, we have seen no signs of winter. On Thursday, Friday, and Saturday, though dull at times, it was dry, but rain fell heavily on Sunday morning. During the afternoon it brightened, and the sun shone at intervals. Monday was dull with occasional drops of rain, while on Tuesday it was dull with a very little rain. On Wednesday morning it was bright and cool.

— WEATHER IN THE NORTH.—The threatened spell of wintry weather of last week did not last, and there has been no frost since the 8th. The past week has brought a succession of south-westerly gales, some of the nights being very stormy with a good deal of rain. Sunday was very cold, and the hills around had another covering of snow. On Tuesday morning a very high wind was blowing from the S.W., with a dense rainy drizzle, and the thermometer at 49°.—B. D., S. Perthshire.

— ROYAL HORTICULTURAL SOCIETY. — FRUIT FLAVOUR CLASSES.—Mr. W. H. Divers, Belvoir Castle, was first for Apples with Cox's Orange Pippin, and Mr. Woodward, Barham Court, second with Calville Blanche. For Pears Mr. Woodward went to the front with Passe Crassane, Mr. Divers coming second with Olivier des Serres. These results were omitted from our report of the last Drill Hall meeting.

— HORTICULTURAL CLUB.—The twenty-third annual house dinner of the Club was held on Tuesday, the 8th, when there was a larger gathering than on any previous occasion. The chair was occupied by Sir J. T. D. Llewelyn, Bart., M.P., Chairman of the Club. There were also present the Revs. W. Wilks and J. H. Pemberton, with Messrs. Harry J. Veitch, J. Gurney Fowler, J. Hudson, J. Walker, G. Bunyard, G. Munro, C. J. Wise, P. Kay, H. Turner, J. Assbee, J. R. Featherby, A. G. Williams, G. Paul, H. J. Pearson, C. Pearson, P. Crowley, A. Watkins, J. Sweet, R. G. Salmond, H. T. Armitage, R. Pinches, and the Secretary. Mr. G. Bunyard arranged for an excellent selection of instrumental and vocal music to be given during the evening. An admirable dessert was provided by the kindness of Messrs. G. Munro, J. Assbee, and P. Kay, while the tables were beautifully decorated with flowers and plants from Messrs. J. Veitch & Sons. The usual toasts were given, and altogether a most successful meeting took place. The condition of the Club was stated to be very satisfactory, and several new members were added.

— SHROPSHIRE HORTICULTURAL SOCIETY.—The annual general meeting of the members of this Society was held at Shrewsbury last week, in the absence of Lord Kenyon, President, under the presidency of Major-General the Hon. W. H. Herbert. There was a large attendance of members. The statement of accounts showed that the total receipts of the year amounted to £4517 4s., the largest amount yet received. This included £437 13s. 6d. subscriptions, £752 0s. 3d. received at the gate on the first day, and £1825 0s. 10d. received at the gate on the second day. Cheap tickets were also sold previously amounting to £550 18s. 4d. The expenses of the year, excluding the spring show, were £3384 10s. 3d. (excluding special gifts). Of this sum no less than £982 1s. was given in cash prizes, medals, &c. The gross profit on the summer show alone was £1130. Heartly votes of thanks were given to the Worshipful Company of Fruiterers, London, for their splendid medals, the Veitch Memorial Trustees, and the late President, Lord Kenyon, for his special medals, and to donors of special prizes. T. F. Kynnersley, Esq., of Leighton Hall, Salop, was elected President for 1898. Considering the special expenses of the year the result is most gratifying, and almost astonishing. We have heard that grants of £35 were made to Mr. Cypher and Mr. Finch for injury to their plants through the collapse of a marquee.

— GARDENING APPOINTMENT.—Mr. Geo. Hawes, until recently foreman at The Gardens, Lyne, Rusper, Horsham, has been appointed gardener to W. Grazebrook, Esq., Thenford, Banbury.

— KEW GUILD.—The annual general meeting will take place on Thursday evening, February 24th, at eight o'clock, in the Lecture Room in the Royal Gardens. Entrance by the Melon Yard Gate.

— THE GREAT FIRE IN HOLBORN.—We are informed by Messrs. Carter & Co. that the fireproof outer walls of their premises were scorched only, and this particular warehouse contained only a few score bales of breakfast oats, so that orders will be executed and despatched with the usual promptitude.

— NEW "GARDEN BOOK" BY THE POET LAUREATE.—According to "Literature," the Poet Laureate has rented for the winter months the Villa Cedri, in the upper valley of the Arno, about two miles from Florence, and is engaged on a Tuscan sequel to "The Garden That I Love," and "In Veronica's Garden." Many readers of these delightful books will look forward to the publication of Mr. Austin's new book. Is it to be "In the Poet's Garden" or "In a Tuscan Garden"? —A. HARDIMAN.

— UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—At the Committee meeting of the above Society, held at the Caledonian Hotel on Monday evening, it was worthy of note that every member of the Committee was present. Twenty-seven new members were proposed and duly elected on the Society, this being the largest number ever elected at one meeting. The average age of the candidates was twenty-five years. The total number of members is now 714. The annual meeting will take place on March 14th, at which Mr. G. Wythes, V.M.H., has consented to take the chair.—G. W. CUMMINS.

— CHESTER PAXTON SOCIETY.—At the usual fortnightly meeting held in the Grosvenor Museum on Saturday last, Mr. C. Flack of Cholmondeley Castle Gardens read an able and instructive paper entitled "Grape Growing for a Private Establishment." Mr. Flack, who is a recognised authority on Grape culture in Cheshire, dealt extensively with the subject, entering fully into all the details of treatment and cultivation of the Vine, and gave a list of the best and most useful varieties for keeping up the season's supply. An interesting discussion followed the reading of the paper, when it was very evident that several valuable hints had been thrown out by the essayist, which the members would carry away with them and put into practice. The meeting terminated with a hearty vote of thanks to Mr. Flack.

— GIANT MIGNONETTE.—The remarkable looking variety of the common British Mignonette which Messrs. Cannell & Sons have at Swanley under the name of Reseda alba, certainly also should be known as gigantea. Whilst the variety grows somewhat spreading, and is measured by inches in height, this giant variety sends its long spikes up to a height of several feet. It is really a noble garden plant, and the long spikes, gathered and set up in glasses, not only keep fresh a long time, but grow and develop quantities of fresh flowers. Ordinary fragrant Mignonette cannot be endured by all persons in a room; this variety, however, has very little odour. It is, too, very hardy, for on a border where Mignonette Machet was quite dead, the giant form was vigorously green, and full of growth—would, indeed, soon bloom. Plants in pots from seed sown in August ranged from 10 to 18 inches in height, clothed with finely lacinated leafage.—A.

— HANLEY HORTICULTURAL FETÈ.—We have received the schedule of the exhibition that is to be held in Hanley Park, Staffordshire, on July 6th and 7th. It is a substantial and excellent production, and predicates a varied and extensive show. The classes in the different sections exceed 100, the chief being the first on the list, in which £20 and a special is offered as the first prize in the open class for a group of plants, with five others in the same class of £15 (and special), £10, £7 10s., £5, and £2 10s. This ought to bring good competition. For a group of Orchids £15, £10, and £5 are provided, with two specials. We also observe a first prize of £6 and special for forty-eight Roses, and the same for thirty-six triples, with three other prizes following in each class. Prizes of £7, £5, and £4, each with a special attached, are offered for decorated dinner tables in a form that is left entirely to the discretion of the exhibitors. The chief prizes for fruit are £5, £4, £3, and £2 for a collection of six dishes. A pleasant feature of this schedule is the offering of so many special prizes by local supporters of the event. Gold and silver medals are announced for non-competitive exhibitors. Evident Hanley means business. Mr. Joseph Kent, Superintendent, The Park, Hanley, is the Horticultural Secretary.

— EARLY SPRING FLOWERS.—When waiting at Barham Junction the other day a beautiful bunch of spring flowers carried by a lady attracted my attention. It consisted of *Pyrus japonica*, Vincas, Snowdrops, Crocuses, Wallflowers, Anemones, and others, showing how early these lovely spring flowers are this season.—A. O.

— WEEDS SHOWING FLOWERS.—Those who have weedy patches or plots of ground remaining undug may be reminded that vigorous plants of Groundsel will soon be in bloom, and if let alone will rapidly mature a crop of seed, which may be blown all over the garden, causing work and trouble in the future. Dig the ground and bury the weeds to form plant food is the advice of—PRACTITIONER.

— NARCISSUS MINIMUS.—This, the tiniest of all the Trumpet Daffodils, opened here for the first time this season on 24th January. There was only one flower, however; and it is probable that the greater number of the flowers will be more than a week later. These are established bulbs, and have not been lifted and dried. Had they been dried off and replanted early they would probably have flowered sooner. This Trumpet Daffodil is always an early bloomer, and in 1890 flowered a few days earlier than this year.—S. ARNOTT, *Carsethorn by Dumfries, N.B.*

— THE GARDENERS' BENEVOLENT INSTITUTION.—In reply to Mr. Ollerhead, I beg to say, that even though, as I proposed, ballot papers need not be signed, only those to whom sent could have possession, therefore it is absurd to talk about anyone being able to fill them up. Surely it is hardly argument to suggest that papers would be filled up and returned after the subscriber was dead. Papers should be issued only fourteen days before the election, and required to be returned per post, with the votes filled in, two days before the election. Were that so, there would be no canvassing for signed but unfilled voting papers, as is now the case, to be used in bundles at the voting scrutiny for the purpose of making certain candidates having friends at Court safe. Called a ballot, the voting is the reverse of balloting, which my proposal would make it.—A. D.

— LOUGHBOROUGH GARDENERS' ASSOCIATION.—On February 9th, before about thirty members of the above Association, Mr. E. Luckhurst, F.R.H.S., gave a lecture on "Plant Food," referring to the soil, and its proper condition of cultivation, as being the medium whereby all manures were gradually absorbed, and in turn given out to the plants as required for their sustenance. By the aid of a couple of black boards the lecturer was able to display in a concise manner the principal ingredients of "the Luckhurst manure," containing the "essential elements" of fertility. The analyses of stable and farmyard manure, sewage, sawdust, peat moss, and soot were referred to, and the best methods of application detailed in a comprehensive manner. The nitrate fields of Chili, the source whence comes sulphate of ammonia and muriate of potash, were briefly described. The lecturer said, that by a careful and judicious application of manures rotation cropping was not absolutely necessary. Some discussion followed upon the merits of sawdust and peat moss as manures, which elicited responses from the lecturer, who quoted instances of the great increase in the value of land which had for a number of years been manured with these fertilisers by market gardeners. The usual hearty vote of thanks was accorded. [Is there not a mistake in the reference to sulphate of ammonia?]

— TOMATO AND POTATO CULTIVATION IN CHESHIRE.—The results of some experiments in Tomato and Potato cultivation at the Cheshire County Council's Agricultural and Horticultural School at Holmes Chapel have been compiled, and are of great interest. In 1896, when the experiments with Tomatoes were successful, the plants were raised from seed sown in the previous December, and the first ripe fruits were gathered on the following 4th May. It was thought by sowing early, and having large and strong plants, the ripe fruit could be produced earlier in the season; consequently seed was sown at the end of August, and the young plants were established before the winter set in. The result was not quite satisfactory. Ripe fruit was gathered a fortnight earlier, but the yield per plant was considerably less. Good liquid manure is described by the chief of the Horticultural School as still one of the best of fertilisers. The heaviest yield of Potatoes per acre was 17 tons 13 cwt. 2 qrs. 14 lbs., and the smallest 7 tons 12 cwt. 3 qrs. 3 lbs., both of these being late varieties. The early varieties averaged from 10 to 11 tons to the acre, and the second early varieties from 12 to 14 tons per acre. In some of the varieties disease claimed 2 tons 10 cwt. of the yield per acre, in others only a few lbs. of tubers. Small and unsaleable Potatoes varied from 3 tons 4 cwt. to the acre to about 8 cwt. to the acre. The experiments are to be continued next season.—R. P. R.

— **STOCKPORT'S FOSSILLED OAK.**—We referred to this ancient relic a few weeks ago. Some newspaper cuttings have been sent to us concerning it. It seems Mr. Bailey, "a local geologist, whose opinions in technical circles is often sought," has pronounced this tree, the age of which he estimates at some 2500 years, a "male" tree. Mr. James Percival is anxious to ascertain how Mr. Bailey has arrived at the wonderful discovery! and wishes to show him, when Oaks are blossoming, that both male and female flowers are produced by the same tree. "The result of evolutionary process," he may perhaps explain; all the same, determining the sex of a tree that has been buried 2000 or 3000 years does seem a little mysterious.

— **THE BECKENHAM HORTICULTURAL SOCIETY.**—This Society has arranged an interesting course of lectures to supplement the ordinary weekly meetings at which various papers are read and discussions follow. The first lecture took place recently, and Mr. James Martin gave an interesting and instructive discourse on the Gloxinia. The meeting was held in the Public Hall, and the room was well filled with gardeners employed in the neighbourhood. The lecturer reviewed the history of the Gloxinia from its earliest known date, 1739, to the present day. Mr. Martin interspersed his remarks with many witty anecdotes. The chair was taken by Mr. H. J. Jones of Ryecroft. A really charming group of Cyclamens, brought by Mr. T. Crosswell, created much interest, and drew from both Chairman and lecturer the highest compliment for cultural skill.

— **MORDEN GARDENERS' SOCIETY.**—The third of the series of lectures which it has organised this season was given by Mr. H. Alderman, gardener to G. Hatfield, Esq., Morden Hall, Surrey, and was entitled "Practical Hints to Cottage Gardeners and Exhibitors." Dealing with the class for the best kept and best cropped gardens, he gave some sound advice as the general arrangement of the ground and the position of the rows of crops; the bush fruit trees, the rubbish heap, and the clean, tidy effect which should always be aimed at. Then the lifting of crops for show was touched upon. Roots should never be scrubbed, as is so often done, but carefully washed in lukewarm water with a little softsoap in it, and allowed to dry. Exhibitors were advised not to be too much elated at their successes in the show tent, and on the other hand not to be discouraged if they do not take a prize at the first trial, but to remember that those who try again are the winners of the future. A hearty vote of thanks to Mr. Alderman brought the meeting to a close.

— **SQUIRRELS.**—Of the habits of these animals in the matter of Walnuts, as referred to by Mr. G. Dyke, I have no experience beyond observing that they left them severely alone when on the trees, and had little chance of securing any when "hulled." Of all fruits the squirrels prefer Cob Nuts and Filberts, attacking them whilst "milky." They will carry off Nuts for eating at leisure, as they will also Plums, especially Coe's Golden Drop, and even Nectarines from walls. Spanish Chestnuts they sometimes "pie" in the ground, and after a time unearth them, either carrying them off elsewhere, or disposing of them on the spot. The animals also proceed in a similar manner with acorns and Beech Nuts, and appear to be guided solely by smell "in finding the solitary Nuts" or acorns after a period of severe weather. The "instinct" of the squirrel partakes of the cunning of the fox, which kills in abundance in order to carry off and bury solitarily, and thus have a feed another day when fresh food is scarce. The dog buries a bone, the fox a rabbit, and the squirrel a nut or acorn; each animal returns with unerring steps to the deposited article on the pressing demands of hunger. Instinct! It is memory, reason.—G. ABBEY.

— **INSTRUCTION IN BOTANY AND HORTICULTURE.**—It has been arranged by the Department of Science and Art to hold, at the Royal Botanic Gardens, Glasnevin, Dublin, a practical course of instruction in applied botany and horticulture, for the benefit of the young gardeners in training there. Dr. T. Johnson, the Professor of Botany in the Royal College of Science, will give a course of practical lessons in the scientific principles of applied botany, followed by a course under Mr. F. W. Moore, the keeper of the gardens, on horticulture and floriculture, with explanation of the scientific arrangement of plants in the different houses and beds in the gardens. The training offered, says the "Irish Farmers' Gazette," is on the lines of that given in the Royal Botanic Gardens at Kew and Edinburgh, and in connection with the Durham College of Science, as described by Professor Somerville when he pointed out to the Commissioners of Manual and Practical Instruction the need for such courses for teachers of Irish schools. It may be expected that the young men after receiving such a thorough training in both the theory and practice of gardening will be more than ever sought after by those who own fine gardens in this country.

— **FRUIT BUDS AND BIRDS.**—The abnormally mild weather experienced this winter has had the effect of causing early swelling of the buds on Gooseberry and Currant bushes. Birds are not slow to recognise this, and unless some means are adopted for checking them, they will soon entirely strip the bushes. Sparrows are the worst, and with them it seems a question of mischief, as many of the buds are simply pecked off and fall to the ground. Many ways are adopted for scaring them, but sparrows are by no means bashful, and soon get on intimate terms with webbing, shavings, and other scares. One of the best preventives is to mix soot and dry lime together, and thoroughly dust it over the bushes, taking care to repeat the operation if rain washes off the mixture. This renders the buds distasteful to the birds, and also acts as an insecticide, destroying pests and obnoxious growth that infest the trees.—G.

— **GREEN GRASS.**—As another evidence of the mildness of the winter, quite as remarkable in its way as are most of the diverse evidences furnished to the papers, I may mention that the gardener at the County Hall, Kingston, was, on January 31st, mowing the lawn there, and when I saw it on the next day I thought I had never at any time seen grass greener or more beautiful than it was then. How delightful a feature a smooth, clean, well-kept grass lawn is at any time we all know, but I do not remember ever to have seen the grass greener or more attractive than it has been of late. This is a tribute to the mildness of the season that is rather unusual. I have helped in winter grass mowing in pre-lawn mower days by running a scythe over it when covered with hoar frost. How easily it would shave off then, but how clogged would the scythe become. Certainly the grass was shorter afterwards, but it was not too green.—D.

— **ARTIFICIAL MANURES.**—Mr. Dyke must excuse me from following him in a discussion *re* the use of artificial manures. These things seem to be like patent medicines. Everybody has his own favourites in which he believes, and it is difficult to show that the world is one whit the better for them. Artificial manuring as advocated by certain manure vendors is rapidly degenerating into cant, from which I hope to be saved. Such experiments as I have conducted and observed have led me to realise their practical worthlessness. As to killing the eelworm, the latest specific seems to be found in tickling its tail with superphosphates to make it laugh, then choking it with a big dose of basic slag. I have had no experience of eelworm, and amongst my gardening friends, who are good cultivators, the same ignorance prevails. It seems to be very easy in these days to get artificial manuring and eelworm on the brain.—A. D.

— **FISH MANURE AND WEEVILS.**—Recently a market gardener in Kent applied a heavy dressing of fish manure—the putrid carcasses of sprats and starfish—on to a piece of poor land with the idea of enriching it. Soon after the ground appeared to be alive with small brown weevils, very similar to the Vine and Raspberry weevils, which played dreadful havoc with the vegetables which formed the crop. Now the gardener is at a loss to know how to destroy the hard-backed marauders, and questions the advisability of using putrid fish as a manure if it is the means of introducing pests of this kind. In many Raspberry and Strawberry growing districts fish manure is largely used, and the Raspberry weevil is the common enemy, and a hard one to fight. Is this pest introduced in the manure? because if such is the case it would pay Raspberry growers to let it severely alone. Perhaps other readers can throw some light on this matter.—KENTISH MAN.

— **A CAUTION.**—A man called on me a few days ago in answer to my advertisements of businesses for sale, stating he wanted one for his son. I asked him where he came from. He gave an address which I have since found was a bogus one. He described himself as a dealer in cattle staying at the King's Cross Hotel. Then came the old trick, at least to me. In a bland way he said, "I did a foolish thing this morning, left all my money at the hotel except a shilling, which I thought was a sovereign; can you lend me one?" He had in return, "What! Get out quick as you can or I shall help you; this game won't do here." Needless to say he went away quicker than he came. He has paid other people a visit I learn, but with another tale. Should he pay anyone else a similar visit the following description may be useful. Age about fifty-two; height about 5 feet 4 inches; shabbily dressed, bald-headed, whiskers getting grey, cut in short all over his face and chin; good address; limps a little when walking. The only regret I have now is that I did not help him to leave my premises by kicking.—ALFRED OUTRAM, F.R.H.S. [A kick with seventeen stone behind it would be no light matter, and it is not surprising that the would-be swindler "went."]

FLUED GARDEN WALLS.

IN reply to Mr. Geo. Dyke (page 56), I do not know whether there are any of these in use at the present time, but I have had some personal experience with these "ancient flues." Though generally discontinued before then, the late Mr. T. Rivers' work, "The Orchard House," in 1850, gave flued walls their quietus. Only the north wall of the garden was flued, this being about 15 feet in height above the ground, covered on the north side with Morello Cherries, and on the south side clothed with the finest Apricot trees I have ever seen to half its extent, and the other half with Peach and Nectarine trees.

The Apricots appeared to like the wall's warmth and dryness, the fires being lighted every afternoon from the blossom buds beginning to show white, and were continued till the early part of June, when they were discontinued on half the length of Apricot wall, but kept going on the other half till the fruit was ripe. This made a difference of about three weeks in the ripening, so that the Apricot season lasted for something like six weeks. The only kind grown was Moorpark, and the trees neither lost limbs from gumming or borers.

Woollen netting, $\frac{1}{4}$ -inch mesh, was employed to protect the blossoms, the net being let down in the late afternoon and drawn up about 8.30 in the morning, or when the frost, if any, had departed. The protection was continued until the end of May or beginning of June, and at the time of the Apricots ripening finer netting was placed over the trees to keep the wasps outside. Everybody was "sick" of Apricots, even the "lad" who had to look after twenty-four fires at eight o'clock at night when the wall fires were on, so the memory was pretty well impressed, especially when this entailed a journey of about a mile each way, and must be done twice in very frosty weather each night.

The Peach part of the flued wall was treated similarly to the Apricot, the netting and the flues being requisitioned as soon as the blossoms showed pink, half of the wall being fired until the Peaches and Nectarines were ripe, so that a supply was obtained from the end of July till far into October. Early Anne was the first Peach to ripen, and Late Admirable the last. In 1852 we had a Peach and Nectarine on one branch on a previous year's shoot of Red Magdalen Peach tree, and also lots of red spider, the warmth and dryness of the wall fostering the pest, and causing the need of forcible syringings to keep it in check and the trees healthy. On the other half of the Peach part of the wall the fires were dispensed with after the end of May and the trees were less pestered with red spider.

What do I think of flued walls? Well, they were good or bad, just as they were worked. If overheated they did more harm than good, but when used in reason, just a little warmth being maintained, they certainly were an advance on unheated walls, the chief points being not to overheat, but at the same time to protect thoroughly from frost. Finer Apricots I have never seen or tasted than were grown against a flued wall; and in 1851 I saw such a sight of wall Grapes as has not fallen to my lot since. The variety was Black Hamburgh, large, handsome, well-finished clusters, against a wall that was flued. It was my lot also to see on a flued wall Banksian Roses blooming splendidly in the cold North. The first vinery I have recollection of had a flued wall, the heat and smoke from the furnace having to make three runs of the length before escaping by the chimney. The wall was covered with Cactuses in great variety, which bloomed magnificently even though shaded with Vines.

As to the "utility of all the expense, with attendant cost of firing," most of the latter was from cinders from the hall, costing little beyond labour, which was then about half the value it is at the present time, while the necessities, or rather luxuries, of life now, as compared with then, are twice as cheap, excepting butchers' meat. The endeavour in those days was, as regards firing, to get as much heat as could be extracted from the smallest quantity of fuel and retain it as long as possible, whereas in these times the principle appears to rest on getting the most heat in the least time, regardless of bulk in consumption. When I took the pen in hand I had no idea of running beyond a few lines, but to go back something like half a century brings to mind many things, some of which a few, if not many, readers may think ought not to be entirely lost.

Reverting to the query about these "ancient flues in garden walls." In the past they did good service, and are capable of still better in these present days where flues (unused) in walls exist. Cover the walls with glass, heat the structures with hot water, and connect the furnace flues with the old ones which run along the wall. Thus may the past be linked with the present on the sound principles of utility and economy. I know the ideas are ancient, but they are sound and substantial. The old flued garden walls securely coped, only need the magic wand of the horticultural builder to form first-class fruit houses on their southern aspect, growing the Vines or trees in a form that will permit of the wall surface being utilised to the fullest extent. There is no need to go to any great expense, only let the structures be like the wall—sound and substantial, then both the houses and wall will give a good account of themselves under judicious management.—G. ABBEY.

CORDON GOOSEBERRIES AT STONELEIGH ABBEY.

THE methods adopted in the culture of Gooseberries on trellises in these gardens are as follows:—

1, SOIL AND SITUATION.—Our soil appears to be admirably suited to this fruit; in fact, any good soil on a dry gravelly bottom will suit the Gooseberry. The situation must be open and well exposed to the sun, or the results will be altogether unsatisfactory.

2, PROPAGATION BY CUTTINGS.—Stout, healthy, young shoots should be prepared early in the winter season; these ought to be about 15 inches in length. All the buds must be cut out except a few at the top of the cutting, in order to prevent the production of suckers. The cuttings should be laid 4 inches apart in drills, about 1 foot asunder, in a partially shaded situation, there to remain till the following year; they may then be transplanted about 18 inches apart each way. The next year they may be planted in their proper position. In the event of the cultivator desiring an immediate effect, plants from two to three years old may be purchased and planted in position at once. In this case, unless cordon trees can be obtained, the side branches must be pruned back to within 2 inches of the main stem, leaving the strongest and most central shoot as a leader.

3, PLANTING AND PRUNING.—The trellises here are 150 feet in length and 5 feet in height, with wires 6 inches apart. These should receive a coat of paint, as well as the posts to which they are strained. The plants, when the leaves fall, should be inserted 10 inches apart and made firm, afterwards tying them neatly to the wires. Pruning may be done at any time from the end of November to February, though I prefer to do it as early as possible, cutting the shoots back to three or four buds—i.e., spur-pruning. When the prunings are cleared away, a dressing of good manure is spread over the roots and carefully forked in.

4, SUMMER MANAGEMENT.—The side shoots are shortened twice during the growing season, and careful attention is given to watering. It is good practice to apply a mulching of manure early in season, allowing it to remain throughout the summer for the purpose of retaining moisture.

5, INSECTS AND DISEASES.—The caterpillar is perhaps the most formidable enemy. If prompt measures are not taken on its first appearance not a leaf will be left on the trees. The means that have been resorted to for the destruction of the pest are legion, but I have found none so effectual as hand-picking. Forking the soil is, I believe, of great advantage, for there the chrysalids lurk, and may be too deep for the emergence of the sawfly which deposits the eggs. The red spider in dry seasons is very injurious. This may be kept in check, and possibly eradicated by syringing frequently with spidicide early in the season, otherwise the fruit will be flavoured with it. We also use the hose frequently and heavily, well wetting the under side of the leaves.

6, LIST OF VARIETIES GROWN.—For early picking, Crown Bob, Whinham's Industry, Whitesmith, and Golden Drop; for late picking, chiefly Warrington, and a few of Pitmaston Greengage. The later varieties we also grow as cordons on a north side of a wall, and by protecting with nets placed double thickness, the supply of fruit is prolonged considerably. I was able last season to send Gooseberries to table for dessert as late as the beginning of November, when they were greatly appreciated. The Gooseberry grown by this method will produce much finer and better flavoured fruits than those produced in the ordinary way on bushes.—H. T. MARTIN, *Stoneleigh Abbey*.

A CHECK TO THE FLOWERS.

WE see frost and snow come now with mingled feelings. So mild has the season been until the first week of February that we had begun to cherish the thought that the garden would escape its usual trials. To those who love the outdoor flowers frost and snow are like sickness; perhaps good, but none the less unpleasant. They may be good for the flowers, but to those longing to see once more the faces of their favourites, they are unwelcome visitors. Their errand may be a kindly one in the long run, but for the time they seem to bring it with biting words and unkindly ways. We can hardly dispute the truth of the words of those who tell us that we had better have frost now than later, but, after all, what poor comfort it is! Instead of the flowers of the Arabis we have patches of snow. Instead of the fresh green of the mountain side we see it white to its base. We see around us the springing flowers checked in their growth by the cold, and we long for the gentle breezes which will once more bring with them the renewed uprising of the flowers. Yet we need not be ungrateful for our present pleasures, nor repine that they are fewer than we would wish. There is much to see, much to give heart, and much of which to tell.

The Snowdrops are with us, and they, at least, suffer not in beauty when compared with the purity of the snow. Of those in flower we may select a few for notice. The tallest amongst them all is *Galanthus nivalis* Kilkenny Giant, one of Mr. Allen's. Though in light soil it is, as measured to-day, a foot high, and this is in the open—not drawn up among other plants, but allowed to grow to its ordinary height. The flower is hardly in keeping with the stature so far as regards size, but the height at which the flowers are borne makes them unusually conspicuous. Near it, and planted purposely so by way of a contrast,

is another of Mr. Allen's Snowdrops; this is *G. nivalis* Tom Tit. It has not been in flower so long as Kilkenny Giant, and its stem will probably lengthen out, but it only measured $1\frac{1}{2}$ inch to-day, so that there is a great difference in the appearance of the two. Tom Tit has small flowers, which are quite in proportion to the whole character of the plant. With all its dwarfness of growth and smallness of flower it is, withal, a pretty little Snowdrop. *G. robustus* is again disappointing, and considerably inferior to the Cassaba Snowdrop, or many other species or varieties of this favourite flower.

The Crocuses now begin to come thickly and quickly. The Dutch varieties are not yet fully represented, but among the earliest is Albion—but the striped, not the purple or blue variety. It is a fine Crocus, less plainly striped than many, but with a deep, dark zone at the base of the outer side of the outside segments, which looks very pretty when the flowers are closed. Just at its best, perhaps, is *C. Tommasinianus*. Its name is a long one, but the size of its flowers is not commensurate

delayed by working a little peat and sand into it, there is nothing but propagation to be depended on for insurance against loss. This should be attended to as soon after flowering as possible. A dry, sunny position is generally recommended for Burser's Rockfoil. This advice may be too literally carried out. The soil must not become too dry in summer, or the plants may be lost. This season has not been a good one for *S. Burseriana* in my garden. The pretty *S. apiculata* is now very pleasing with its primrose yellow flowers, although these are not so numerous as in some former years. Had we had a little more sun this Rockfoil would have been exceedingly attractive. The close growth it makes, its early habit, and pretty little flowers make it a favourite with me.

Hepaticas are very bright, and are always seen at their best when the sun shines. It is then that their bright colours are seen to most advantage, as the blooms are raised and opened full to the sunlight. Of course in bloom I think *H. triloba splendens* the most brilliant of

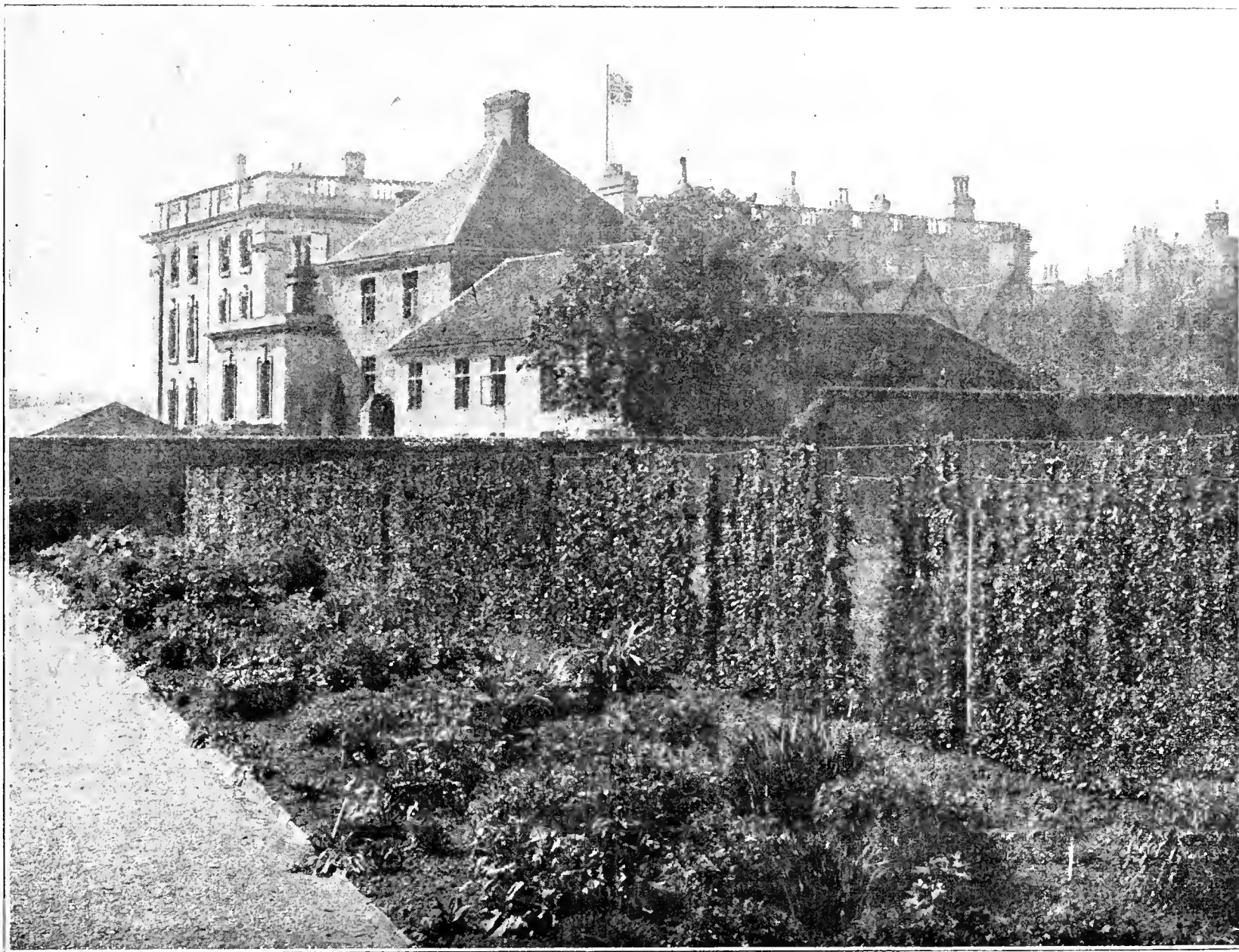


FIG. 22.—CORDON GOOSEBERRIES AT STONELEIGH ABBEY.

with that of its appellation. Although not large they are pretty, and a small clump is very attractive when in bloom. The flowers are described as "sapphire-lavender," and colouring is so difficult to describe, that we may content ourselves with the definition given. It is, however, a variable species in shade of colouring, and bulb dealers who keep such special flowers as these are selecting and naming the various shades; yet it is possible to procure these among a dozen or two of flowers from seeds or from corms from which the various shades have not been selected. The flowers of *C. Tommasinianus*, when in an unopened state, are long in shape, and vary in colour from almost white to nearly purple. The variation in the inside of the segments is not so marked, but ranges from pale lavender to purple. Except in the case of those which are nearly white outside, the flowers have a peculiar "grained" appearance when unopened.

The early Saxifrages are always interesting, and in bright, wintry weather the varieties of *Saxifraga Burseriana* are very beautiful with their white flowers and sharp-pointed leaves. Charming little tufts do these plants form, and it is unfortunate that frequent division is necessary if we are to keep up our stock. *S. Burseriana* begins to die off when it becomes large, and although the death of the plant may be

all. I am inclined to the opinion that there are fewer blooms on these this season, and a circumstance one is disposed to attribute to the character of the weather in autumn.

Iris reticulata and its varieties are comparatively late, and even *histrioides* has been unwilling to unfold. The ordinary green-spotted Snowflake is in full bloom in a sheltered corner of the rock garden, but the form with the yellow spots is only above the soil while the one with several flowers on a stem is still in full blow. *Scilla bifolia*, as represented by a variety from Broussa, is in full flower also, though the other forms are in this, the second week of February, not showing colour. *Scilla sibirica* is in bloom in several places, and the Winter Aconite contrasts well with its dark blue flowers. The Dwarf Almond—*Amygdalus* (*Prunus* of "Index Kewensis") *nana*—is almost ready to open, and there are Primroses almost "galore," *Sisyrinchium* and *Cyclamens*. *Anemones blanda* and *coronaria* are in bloom, and *A. appennina* will follow soon. Grape Hyacinths are sending up their spikes, which before long will entice us with their beauty. As I finish the rain has come again, and, with the check removed, we shall soon rejoice with the "dancing Daffodil" and the many other flowers which come with the spring.—S. ARNOTT.



THE NATIONAL CHRYSANTHEMUM SOCIETY.

WE are now very near to this Society's annual members' meeting. Very much hinges on that meeting. Until there is a great rise in the intellectual and social status of the Committee, it is rightly felt that the Society must remain, as at present, a mere accessory to the Westminster Aquarium. That is indeed a most deplorable position for a Society that aspires to be regarded as National to occupy. The present executive is too much of the earth—earthy. It represents far too much for the good of the Chrysanthemum, either mere trade or exhibiting interests, and so far as the trade is concerned also by selling space incites unfortunate jealousies. It is still farther much too large a body to be productive of good. At present it is the slave of wire pullers. Will the annual meeting do anything to improve this state of things, or will the members be but of the same clay as their representatives? No doubt it is in this direction the Aquarium advocates look for salvation. If the members resolve to clear out of the Committee all retiring members who will not declare against the Aquarium, and put into their places men who will so declare, they will perform great, good service. Still farther, they should, if it be their desire, carry a resolution calling upon the executive to close their connection with the Aquarium at the end of the present year. If not prepared to adopt such action as this, then best leave the matter alone, and admit that protests are but fizzles. Members must be firm and independent if they will not be sat upon and dragged by the tail that wags the dog.—K.

A GARDEN DRAMA.

I HAVE had a mysterious communication. It is couched in the form of a play. What worries me is its ambiguity. In the hope that some sympathetic friend will be able to read the enigma for me I give this puzzling drama (which is short) in its entirety. Communications of an elucidatory nature may be addressed to me, care of the Editor, who will forward them at once.

"MUM'S THE WORD."—A PLAY IN THREE ACTS.

ACT I.

SCENE.—A secluded glade in Euphorbia Park.

(Enter CLOAKED CONSPIRATORS).

1ST CONSPIRATOR: My stature's short, but my determination's great
This enterprise to further. A thousand stalwarts—

2ND CONSPIRATOR: More, man!—of MAN-like action!

1ST CONSPIRATOR: Ay, such, indeed. But soft! thy meaning I perceive. More MEN I want.
A thousand stalwarts, thou wouldst say, and more
Support me. 'Neath the heel of trading syndicate
The Golden Flower of Liberty is crushed.

3RD CONSPIRATOR: Shea-me! And shame it is.

1ST CONSPIRATOR: Alas! 'tis true. Her devotees foregather
In clannish, misty halls, where fighters reign,
Where acrobats, performing dogs and serios shrill
Their antics do perform. Shall this thing be?

ALL:—No!

1ST CONSPIRATOR: Amen to that. Downward the glove is thrown
And I the challenger. Now the time approaches
When battle must be given. Neither knight
Nor cleric militant shall turn me from my purpose.
My blade is whetted. Sword of belted earl,
Mace of bishop or of dean—

2ND CONSPIRATOR: Pardon the interruption, saidst thou dean?

1ST CONSPIRATOR: Ay, dean or bishop, earl or duke, must fall
If in the path of progress he should stand.
I'll take no nay. The Flower of Liberty
I'll raise aloft, and beneath—soft, give me your ears—
I'll build a treasure house for the Reserve.
Say I well?

ALL (impressively): Excellently well.

1ST CONSPIRATOR: Good! Now if success shall crown us we must hasten
Our plans to make. We must be circumspect,
Our goings and our comings must—

4TH CONSPIRATOR (starting): Ah! What sound was that?

1ST CONSPIRATOR: Peace, pale friend, I name no names, now gather round
And hearken.

(Left conspiring.)

ACT II.

SCENE.—The Royal Piscatorium.

(Two men are conversing.)

1ST PISCA-TOREADOR: Patience! sayst thou? Patience! and I thus bearded!

2ND PISCA-TOREADOR: Why, ay; patience is what I said. Look you—

1ST PISCA-TOREADOR: I will not. Shall I meekly bend, in my ripe wisdom,

To insolent criticism? What, forsooth, am I
That I should yield to clamour?

2ND PISCA-TOREADOR (drily): What art thou? Why, a secretary.

1ST PISCA-TOREADOR (proudly):—Nay, a dictator! Honorary, please.
Obedience I claim and will enforce
To my behests. Should they dare breathe defiance
I will hurl a threat of resignation.

2ND PISCA-TOREADOR: Patience, I say. What if they accept it?

1ST PISCA-TOREADOR (uneasily): Accept it!

2ND PISCA-TOREADOR: Ay! What then?

1ST PISCA-TOREADOR: Accept my resignation! Part with me! 'Tis monstrous

Such thought to entertain. Nevertheless, now I think on't
I will discretion summon; for I have heard a whisper
That impious minds are plotting my defeat.

ACT III.

SCENE.—A room at the Handy-Andy Hotel.

CONSPIRATORS, PISCA-TOREADORS, GARDENERS, JOURNALISTS, &c.

1ST PISCA-TOREADOR: By favour of this meeting a report I'll read
Of wondrous progress made in this our work.
Two score years ago and more an inn obscure
Our habitation was. The golden flower languished,
Cold-favoured by the public. But time has passed
And wondrous transformation has had place.
A strong hand led us on our devious way
To fortune. When cold in death that warrior lay
His task devolved on me. Have I performed it well?

(Conspirators whisper together.)

1ST PISCA-TOREADOR (pleadingly): Survey the glorious page of this our history,
The numbers of our army, its equipment.
Some there are who do contend the price of triumph
Is too great. They say we are no army, but a rabble
Driven to dark halls for our exhibitions,
Bound hand and foot to entertainers of the fickle crowd
To whom we are a yielding and ignoble tool.

CONSPIRATORS: Ay, 'tis true.

1ST PISCA-TOREADOR: Nay, 'tis false. None but I know the truth.
None so well as I appreciate the sacrifices
Made on our behalf.

CONSPIRATORS: For dividends.

1ST PISCA-TOREADOR (horried): Dividends! Ah! drive that loathsome word away.
'Tis on philanthropy we take our stand, that
And nought else. Are there in circles horticultural
Souls so base as to imagine that our union
Is one of gold?

1ST CONSPIRATOR: Do you resign?

1ST PISCA-TOREADOR (evasively): Resign? Who spoke of resignation?
The word is strange
And unfamiliar.

1ST CONSPIRATOR (ironically): Welcome the coming, speed the parting guest.

1ST PISCA-TOREADOR: I read not riddles. My words are plain.

1ST CONSPIRATOR: Quite plain. You spoke of private knowledge
And of resignation. Friends, I make a proposition.
Our officers keep information from us, give us threats.
Let's change our officers. I have supporters here
A solid phalanx, sworn to give me help
In this emergency. Give signs, I pray you,
That we are resolute to have our will. (None move.)

1ST PISCA-TOREADOR (in triumphant aside): The big braves hang back

Now that the crucial hour has come. I win!

The day is mine. (Hums away elated): What a pack of fine fellows they are! Tra-la!

1ST CONSPIRATOR (bitterly): And am I thus deserted in my hour of need?

Am I indeed left to bear the brunt of battle

Alone? Is this shame possible? Alas! in olden time

I have the same experienced, yet I thought

A bolder British spirit now prevailed. Here's for Euphorbia—
And oblivion.

CURTAIN.

(Exit.)

—A MUMMER.

CHRYSANTHEMUM NOTES.

MUCH has been written in the Journal of late as to the "best" selection of varieties for various purposes. No doubt valuable information is thereby obtained by those who have not the personal knowledge requisite or the opportunity of judging for themselves. Of course there is no such thing as a "best" selection; the choosing of varieties is purely a matter of personal taste. I note, however, and with pleasure, that there is a strong tendency towards selecting varieties possessing points of "quality." Some writers may feel inclined to join issue, and inquire, What is "quality" in a Chrysanthemum bloom?

My definition of "quality" is somewhat after this style. A bloom of the Japanese section should not measure less than 7 inches in diameter; if it were 2 more it would be all the more desirable. A proportionate depth should be present of, say, 5 or 6 inches. The florets ought to be flat, ribbon-shaped, or slightly turned under at the edges. There must be no sign of an "eye," neither must it be possible to see between the florets on to the board when staged. The colour should be as decided as possible, and as pleasing as one would wish to see. Such is my ideal of a Japanese Chrysanthemum. Some persons will differ, no doubt.

New varieties undoubtedly are the life of the interest in the Chrysanthemums. If the introduction of new forms were to cease for a time interest in the flower would decrease also. There is an innate craving in the mind of man for something fresh, new, or what we do not already possess. Now that English cultivators have taken up the raising of new varieties we hope to see them produced on some defined basis. The intercrossing of varieties will perhaps be done on some scientific basis for the production of fixed and desirable colours. At present the hybridisation is done on haphazard lines.

Societies might do much to encourage the introduction of new and improved varieties by the offering of prizes for those introduced within a given date. It is surprising what a stimulating effect the prospect of winning a prize has upon intending exhibitors. In support of this suggested idea I need only allude to the magnificent results obtained at some shows by the offering of handsome prizes for cut blooms staged in other than the orthodox plan of cups, tubes, and stands. Only a few years since any other idea was out of the question; yet see how much has been done at Edinburgh, Hull, the Royal Aquarium, not to mention smaller shows, the committees of which have been bold enough to strike out a new line for themselves.

The question of "sports" in Chrysanthemums appears to be on the wane amongst cultivators, writers, and "scientists" generally. The reason for this is apparent. While we can procure all that is required on such easy terms—I allude to seedling-raised plants—it seems too much to expect the "ordinary" gardener or Chrysanthemum expert to trouble with the origin of "sports." There is, however, no denying the fact that in certain sections the best varieties have been obtained as the result of "sports." Certainly, amongst the incurved, seedling forms are seldom so consistent as the freaks of Nature. If we could have some light thrown upon the origin, cause, and effect of "sports," who knows but that we might improve considerably upon Nature's endowments!

To the true lover of Chrysanthemums in all its phases and forms the free and ever reckless manner in which new varieties are added to the incurved (?) section is anything but pleasing. It cannot be disputed that of late years varieties have been most liberally added that ought not to be classed as typical forms of the section so much prized twenty years ago. It is quite true that in a few more years there will be fewer specimens seen at shows than even now. Introducers are not blameless for this falling off. Too many sorts have been added to attempt to increase the waning popularity of a section at one time so desirable.

There is no doubt that the cultivation of Chrysanthemums for purely decorative purposes during the last two or three years has greatly increased. Especially are the late-flowering varieties appreciated. This phase of the subject might well and profitably be attended to yet. The Queen, recently alluded to in the Journal, is decidedly an acquisition for late use. At the time I write, February 12th, we have really attractive blooms of this on plants that were flowering freely at Christmas.

The out-of-door flowering varieties of Japanese, such as Roi de Précoces, Comtesse Fouchier de Careil, Ryecroft Glory, and numerous others, are desirable, and might well be added to. These varieties open during October and the early part of November out of doors, at a time when the bulk of the ordinary border plants are over. This is just the class for the amateur to cultivate who is desirous of having a supply of bloom, and has not the means of cultivating the ordinary November flowering sorts.

Just one sentence about single-flowered varieties. Many times I have written in favour of this delightful section. I am pleased to find such writings have had the desired end. For the decoration of the dinner table, vases in rooms, as well as the conservatory in a growing state, no class can put them in the shade. The variety, too, is almost inexhaustible, both in colour and form. Especially bright are some, rendering them all the more desirable.

I do not think the most exacting critic of the Chrysanthemum as an exhibition flower can maintain that there is any decline in popularity of the autumn queen. True, we now and again hear of a society compelled to abandon its exhibition; on the other hand, though, accessions are made. Several horticultural societies within my knowledge have had to discontinue summer exhibitions, and rely exclusively upon the Chrysanthemum as a means of filling their coffers. It is to be expected that extensive shows like Birmingham, Hull, and Edinburgh will attract huge crowds. When, however, we consider a quiet city like Winchester, for

example, that struggled hard to make summer meetings a success, and failed, then confining their energies to the establishment of an autumn exhibition, it says much for the Chrysanthemum as an allurement of thousands of persons who now annually flock to see the fine show annually held in the Guildhall.—E. MOLYNEUX.

LEAF RUST FUNGUS.

I TAKE the liberty to send you herewith in a box some leaves from freshly rooted Chrysanthemum cuttings taken from several different varieties, which are all more or less affected, as you may see, by the *Trichobasis chrysanthemi*, or "fungus rust," so fully described by your contributor, Mr. Abbey, in last October's issues of your Journal. It might be useful to submit these leaves to Mr. Abbey, and I am sure many of your readers would, like myself, be interested to hear from him whether between last autumn and the present time he has been able to come to any definite conclusions as to the character and mode of propagation of this plague and as to the cause of it, as well as the best way to prevent its appearance; further, whether the present examples present any different characteristics to those submitted to him last autumn.

For Mr. Abbey's information I may add that out of over 200 cuttings rooted separately in 2-inch pots, and all placed together in shallow boxes in a greenhouse, only some twenty-five have, so far, been seen to be affected by the "rust." These twenty-five are all new varieties, and come from two nurseries which are admitted to have been affected last season, but the rest of my batch, though all placed close together (and coming mostly from my own plants and a few from friends) are quite clean. The cuttings, even those worst attacked, are otherwise growing strongly and sturdily.

I am inclined to think that the cause of the disease is to be found in the fact of new varieties being forced on to supply cuttings to meet the demand—in other words, that it is constitutional, and it would be useful in this regard if it could be ascertained whether the varieties most attacked in the different parts of England, in New Jersey, Italy, France, or elsewhere, did or did not all emanate originally from one or two sources, and whether the said varieties were mostly new. If yes, this would tend to confirm my view.

I think you will agree with me that this is a subject which deserves serious study and consideration from all horticultural authorities, especially those having the means and facilities for collecting reliable data on the matter, and subjecting the disease to scientific and chemical examination.—J. G. MILLS.

P.S.—I would like to make one other suggestion—i.e., that you should invite through your columns information from the best known amateur growers of show plants on the one hand, and from large growers of cut flowers for market on the other, as to whether they have, last season or this, seen the rust amongst their plants, and, if so, on what varieties. Since writing my letter I have been told by a market gardener that some years ago the same or a similar disease appeared on *Pelargoniums* after several seasons of eraze after new varieties, and that the plants had all to be thrown away, and it was only after some considerable interval that more new varieties could be raised.—J. G. M.

[Both amateurs and growers of Chrysanthemums for market are perfectly at liberty to communicate information of the nature above indicated, but as a rule the last named do not seem to have much time for pen exercise. They are about the busiest men we know, and as a body rank among the ablest cultivators in the world. Mr. Abbey's observations on the leaves that were sent to him are appended.]

The leaves submitted by Mr. J. G. Mills are all infested by the Chrysanthemum leaf rust fungus. Since last summer I have gone into the allied forms of rusts, the nearest being that found in this country on the "Hardhead" or Knapweed (*Centaurea nigra*), which produces telento or resting spores in abundance; but it does not appear to take to the Chrysanthemum. Of the common Tansy (*Tanacetum vulgare*) leaf rust fungus (*Puccinia tanacetii*) I have not been able to secure fresh specimens to test its effect on the Chrysanthemum. I should like specimens of Tansy leaf rust for experimental purposes. I believe the Chrysanthemum leaf rust fungus (*Uredo chrysanthemi*) to be a new species of American origin. Both in the United States, in England, and in Italy it first appeared on the variety Niveum, raised in America, and from this it spread to others.

There is no evidence of the disease being distributed on cuttings or young plants before the spring of 1897, or of its general prevalence before the late summer and autumn of last year in either the Old or New World. The forcing system, both as regards raising new varieties and getting up stock, may have something to do with the breaking out of the disease, as whatever weakens the plant lays it open to readier breach by the enemy. Some varieties have naturally hardy constitutions, and hence are better able to resist the inroads of parasites; and even these resistant varieties may be so weakened by cultural treatment, such as the undue forcing of growth for stock, close and dull conditions for rooting and forwarding young plants in over-rich soil, as to produce unresistant growth.

The study of "rusts" is another question, and I regret to say one of the least understood, as regards preventive and remedial measures, of all fungoid diseases; but they all lead very practical and definite lives. That of the Chrysanthemum leaf rust is from a spore (not having a butterfly existence, as commonly supposed, but capable of hardening or being hardened in integument, so as to exist for a considerable time), to put forth its germ tube in presence of a soft glow of moisture and nutritive medium, not on anything, but upon a Chrysanthemum leaf, mostly failing if on the upper side to effect an entrance, as the cuticle is too hard;

but on the under side, either pushing through a stoma or boring through the epidermis. Once in, the germ tube pushes its way by sheer force of growth in the tissues, abstracting the contents of the cells and multiplying its threads or mycelial hyphæ in a very determined manner. In hard tissue it makes little headway, the spots being small, and the leaf not relatively so much injured as when the leaf is fleshy and soft. In the large leaf the hyphæ strikes deeper and the pustules are larger, often covering the under side of the leaf surface with brown spores. Every one of these spores, no matter whether from the small pustule or the large one, is capable of continuing the plant, being, in fact, a part of the parent endowed with all its inherent properties. It cannot, however, reproduce anything but itself.

The cultivator can do something to ward off the attacks of the parasite upon the assumption that rust arises from weakness of plant—the inducement of in-and-in breeding and forcing of stock, indifferent nutrition, and improper treatment. The hardier variety or the sturdier cutting has the best chance, and the plant duly supplied with silicates, grown steadily under full light and air, will have stouter cell walls, all knit together in the most effective manner for defence. There may not be any disease in such case, but there arise circumstances over which the cultivator has practically no control, such as those of the elements in respect of wet or sunless weather, and then the rust appears, but it could not have come without spores to produce it. Against their germination we should not only fortify the plant on strict hygienic lines, but protect the foliage by a coat of mail.

The cuttings would never have had rust had they been protected by dipping before infection in Bordeaux mixture. True, they may have been infested when received, then when disease appears, use repressive measures promptly. The fungus is the whole and sole thing to get rid of, and only killing will do it. Treat the cuttings with a fungicide, old rusted and badly affected plants burn, giving no quarter to the enemy. Fungicides need to be employed where the fungus enters the plant—namely, by the leaves, mostly from the under side. The disease is not taken from the soil by the roots.

If growers of Chrysanthemums will neither use liquid nor powder insecticides early and systematically, they may become growers, not of clean plants, but producers of myriads of spores of the minute though destructive parasite. It seems desirable that raisers of plants for sale should pay attention to this matter alike in their own interests and for the general well-being of the "Autumn Queen." Its enemy is with us—of that there can be no doubt—and will increase and multiply as the Potato disease fungus did, and does, under favourable conditions for development. —G. ABBEY.

THE LATE BELFAST CHRYSANTHEMUM SHOW.

I HAVE just read with interest Mr. Peter Brock's notes on the above show in your issue for February 10th, and as it concerns myself I shall be much obliged if you will kindly allow me a little space for my reply. Firstly, I am at one with Mr. Brock when he states that the valuable prizes offered in the big class were a great attraction. They undoubtedly were. Probably some of the best blooms seen last year were staged at that fine show. No less than fourteen stands of forty-eights competed, including some from our best English growers.

Secondly comes the disputed point relating to Mr. Mease and the sport from Madame Carnot which he staged in his second prize stand. Mr. Brock states that it was a case in which some judges would not have hesitated to disqualify according to the reading of the schedule, which stated that all varieties must be in commerce. I am not so sure about that. I may state that I was the sole judge in this big class. Anyone acting as a judge, I care not what in, undertakes a very responsible duty, and unless one is absolutely certain before he does so, he has no right to disqualify; far better give the exhibitor the benefit of the doubt. I do not for one moment pretend to be a perfect judge, far from it, but I do claim to know something about Japanese Chrysanthemums. I can tell Mr. Brock that we grew both Yellow Madame Carnot, supplied by Mr. H. J. Jones, and George Warren, from Mr. Wells, and he may be surprised to know that with us the Yellow Carnot came about as pale as the flower shown by Mr. Mease, and how could anyone justly disqualify a bloom simply because it was pale in colour the first year it was in commerce? Is it not a fact that in nearly all cases the colour varies considerably in Chrysanthemums? As examples, take Etoile de Lyon or Vivian Morel. At the late big show of the National held at the Royal Aquarium I believe that Mr. Mease showed the same variety as Yellow Madame Carnot which received the prize as the best Japanese bloom in the show, and it was passed as such by two of our best judges.

I will, as near as I am able, relate the facts of the case at Belfast. In going through the stands, to ascertain if the exhibitors had complied with the rules as to the varieties staged, I passed the bloom in question as a poor specimen of Yellow Madame Carnot without reading the name, so that Mr. Brock will allow I must have considered it something like Yellow Madame Carnot. During the early afternoon a protest was lodged with the Secretary, as Mr. Mease's assistant had labelled it primrose sport of Yellow Madame Carnot. Now, on the face of this it certainly looks like a clear case of infringement of the rules. Mr. Wells, of Chrysanthemum fame, came to me, and said it was entirely his fault; he told Mr. Mease's representative to name it as he did, at the same time saying it was the variety catalogued by Mr. Jones. Mr. Mease's man confirmed this, stating he should have named it, as instructed by Mr. Mease, Yellow Madame Carnot. Now, under the circumstances, believing as I did the case was a pure mistake, I would not consent to disqualify. At the same time, I do not pretend to say there are not two, and probably three sports varying in shades of colour. I shall be glad to

hear what Mr. Mease has to say on the matter. I may mention that I have had no communication with Mr. Mease, either direct or indirect, since the show respecting it.

Thirdly, Mr. Brock complains about the cardboard used in the third prize stand. If Mr. Brock had a clear case here, why, may I ask, did he not protest at the proper time, and not bring up a matter of this kind months after the event, waiting for someone else to do what he was not anxious to do himself? But, if of any comfort to him, I may say that, cardboard or no cardboard, the third prize stand would have received the same award from any responsible judge. I much regret this little friction. I can conscientiously say that I acted quite impartially, taking the greatest pains in making the awards, and I received nothing but kindness from the able Secretary and other officers of the Society, as well as many gardeners, both Irish and Scotch.—EDWIN BECKETT, Aldenham House Gardens, Elstree, Herts.

[We suspect there are few more competent judges of Japanese blooms than Mr. Beckett, and none more conscientious. In such important classes we should have thought that two competent judges would have been engaged. An individual judge may be so absorbed in the work of adjudication as to overlook for a moment the exact terms of the schedule.]

COLLARETS AT THE BELFAST SHOW.

MAY I be allowed to remark *apropos* of the "Belfast Chrysanthemum Show Reflections," page 122, that though late in coming they are better late than never. The facts as related by your courageous correspondent, so far as the cardboard collarets were concerned, are exactly such as were related to me by an independent gentleman who went, and saw, and returned disgusted that such things were permitted, and not only permitted, but apparently effected their purpose of gaining points.—PADDY.

SHEFFIELD CHRYSANTHEMUM SOCIETY.

THE monthly meeting was held in the Society's room on Wednesday, the 9th inst., when Mr. W. H. Winter read an essay on "Plant Life." He referred to the varied phenomena of the vegetable world, such as growth, food, fertilisation and propagation, and explained the cellular tissue of plants, the principal organs, root action, circulation of the sap, and other matters relative to the subject. There was a good attendance, and at the close of the essay a very interesting discussion was taken up by a number of the members, when much valuable information was imparted. The floral exhibits for professional members were Tulips in pots, which produced a good number of competitors. Mr. S. Lomas secured first prize, Mr. Chas. Scott second prize, and Mr. Thos. Brewer the third prize. The exhibits for amateurs should have been pot plants in bloom, but to the surprise of the officials not a single exhibitor turned up, probably for the first time since the establishment of the Society. Messrs. W. Artindale & Son of the Sharrow Vale Nursery exhibited, not for competition, three large tubs of Tulips. They were of three varieties, and so good that the judges awarded them a cultural certificate. The introduction of new members and a vote of thanks to the essayist closed the meeting. Mr. John Haigh presided.

HONOURS DIVIDED.

IN spite of Lord Chesterfield's aphorism, "There never were since the beginning of the world two cases exactly parallel," we find the Chrysanthemum in the matter of big blooms supplying, apparently, the missing link; and another fact for our law givers and dispensers to face. That there can be no better than the "best" goes without saying, and when the judges award dual honours, or, rather, split the premiership as previously related and commented upon on page 122, we must admit that either their perceptive faculties were at fault or that the paragon of polite teaching was not infallible.

Assuming for all practical purposes that the blooms were of equal merit so far as human judgment could discern, and that not even the wisdom of Solomon could have settled the matter more wisely, the question still asserts itself, Which was the "best bloom" in the show? According to my interpretation of the simple scheduled dictum, the "best bloom," there was none, for on the same line of reasoning it is possible if not probable that occasion may arise when three specimens may claim division of the honours; and, although the possibility may be remote, and the probability infinitesimal, it is not sufficient to exclude four "best" (?) blooms. Still, I take it that neither the wording of the schedule nor the sense of it admit of any such interpretation, and in the matter of what has occurred, assuming, of course, that the points of merit were equal, there was no "best bloom" in the show. Hard as it may appear in dually discounting extraordinary merit, the arrival at that decision, which is logically a just one, would appear to be the correct interpretation of the matter.

But there is another side of the question directly bearing upon the particular case under notice, and is it fair, one may ask, to either section of the Chrysanthemum as represented by a perfect bloom of that peerless beauty, Mrs. A. Hardy, on the one hand, and a "high-class specimen of Empress of India" on the other, to place them in juxtaposition? I have ventured to give high meed of praise to Mrs. A. Hardy, knowing what it is when in perfection, how difficult it is to obtain, and how seldom such is obtained. Justice should be done to both sections, which that loosely constructed dictum, "the best bloom in the show," does not admit of. Is it fair? Others better qualified to judge, but not more interested, may agree with me that it is not. If so, then what is not fair is unfair, and the sooner this lax method of selecting the best bloom from rival sections the better it will be generally for all concerned, particularly for the judges whose difficulties appear to grow in ratio to the development of high culture.—VESPA.

THE N.C.S. SMOKING CONCERT.

THE gathering for smoking and singing at Anderton's Hotel on Monday night, inaugurated by the Committee of the National Chrysanthemum Society, was a great success. Mr. James H. Veitch acquitted himself admirably in the chair, and the singing and smoking by some 200 ladies and gentlemen were of a high order of merit, not that all sung or all smoked, but only that they were there and happy. It is expected that a sufficiently large sum was realised to place the Society on a firm and independent basis, and that it will soon be capable of holding its shows anywhere where room can be found for them. The cigarettes, speeches, vocalism, and everything else were of the best brands, and though it is thought no profit would be derived by the famous hotel, it is hoped the National Chrysanthemum Society will be greatly strengthened, and that the efforts of the Committee and Secretary to that end will be correspondingly appreciated.—A CHIEF.

NEW FRENCH CHRYSANTHEMUMS OF 1897.

AFTER visiting the Ghent and Paris shows in 1896, where we saw a large number of the new seedlings that flowered last autumn for the first time in England, there was an especial interest in watching their development after cultivation by English growers. As might be expected, Mons. Calvat's novelties formed the bulk of the additions to our already extensive collections, and, as was expected, many of his 1897 varieties seem likely to occupy a foremost position on our show boards in the future, for those who are most interested in the subject from a pecuniary point of view proclaim them to be novelties of the very highest order.

Good as many of them were on the Continent, they seem to have improved in many instances both in size and solidity. A few, perhaps, were not quite so clear and pure in colour, but even then these exceptions are in the minority. The most effective and distinct to my taste are N.C.S. Jubilee, Topaze Orientale, Mdlle. Lucie Faure, Madame Ferlat, Mdlle. Laurence Zédé, Werther, Directeur Liébert, and Soliel d'Octobre among the Calvat race, while it is interesting to note that Mons. Nonin, a Parisian grower, had a fairly large representation among the novelties. A raiser once more generally known, Mons. de Reydellet, distributed some fair novelties that seem likely to please a certain class of cultivators, his best being unquestionably Lucille Mathieu de la Drôme.

After carefully going over my notes I am disposed to think that the undermentioned will be those that suit the taste best of the English exhibitor.

Directeur Liébert (Calvat).—Japanese of large size and compact build. The florets are of medium size, grooved and curly; colour deep lilac mauve.

Lucille Mathieu de la Drôme (Reydellet).—This promises to be a useful addition to the old florists' type of incurved varieties. It is large in size and deeply built; the florets are rather narrow, and regularly incurving; colour pale golden yellow.

Madame Ferlat (Calvat).—A grand massive Japanese incurved of great size and substance. The florets are heavily grooved; the colour pure pearly white.

Mdlle. Laurence Zédé (Calvat).—Another big globular Japanese incurved, with grooved pointed florets of medium width; inside colour violet amaranth, reverse silvery pink.

Princesse de Galles (Calvat).—Japanese with very long florets, which are grooved and of medium width; colour pale pink shaded yellow, tinted purple.

Topaze Orientale (Calvat).—A solid, compact incurving Japanese, very globular and regular in form; florets grooved and broad; colour pale lemon yellow.

Mons. G. Chabanne (Calvat).—A closely built Japanese incurved with rather broad florets; colour rich golden yellow.

Souvenir de Molines (Calvat).—Japanese, close and compact in build; golden carmine bronze, reverse golden.

Leocadie Gentils (Quérier).—A sport from *Enfant des deux Mondes*, raised in France last year. It has narrow grooved florets, the blooms are of large size, and the colour pale pure lemon yellow; very hairy.

Mdlle. Louis Brossillon.—This, too, is a Japanese incurved of very large size. It has medium sized grooved florets that are twisted and intermingly. It is said to be a seedling from Madame Carnot, and its colour is a pure white, very slightly tinted.

Dr. H. Pietro Baragiola (Reydellet).—Japanese with narrow, flat, reflexing florets, not large, but very striking and distinct. The colour is deep golden yellow, shaded rosy carmine.

Madame G. Bruant (Calvat).—A monster Japanese with very long drooping florets; colour pale rose shaded purple towards the tips; centre almost white.

Soleil d'Octobre (Calvat).—A rather early blooming Japanese with medium sized drooping florets, curling at the tips; colour a pretty shade of pale lemon yellow; reverse silvery.

Werther (Calvat).—Globular Japanese of large size, having grooved incurving florets; colour rich deep rosy amaranth, reverse silvery. A fine effective novelty.

Vicomte Roger de Chezelles (Calvat).—Wrongly described in most reports as *Vicomtesse*. A very large Japanese, the centre florets incurving and closely resembling Mr. Briscoe Ironside's seedling *Arona*; colour golden yellow bronze, reverse silvery yellow.

Madame Ph. Rivoire.—This is a Japanese also of great size; florets very broad and ribbed on the reverse; colour pure white.

Mdlle. Lucie Faure (Calvat).—A most superb novelty of the Japanese incurved type. The florets are of great length, good substance, and deeply grooved; one of the purest whites, and will probably rank as one of Calvat's best.

Madame Ed. Roger (Calvat).—Japanese incurved; florets of medium width and grooved, large solid globular shaped blooms. This is a most distinct novelty, being of a pale but decided sea green colour, which, in its early stages, is very effective.

N.C.S. Jubilee (Calvat).—Another very fine globular Japanese incurved variety; the florets are broad and grooved, colour pale lavender pink, with silvery pink reverse. A noteworthy acquisition in its section.

Mons. Massange de Louvrex (Calvat).—Also of the Japanese incurved type; florets of medium width, colour a very fine, clear shade of pale yellow.

Souvenir de Madame F. Rosette (Calvat).—A big solid Japanese incurved, with good florets pointed at the tips; colour plum coloured amaranth, with silvery amaranth reverse.

Mons. Hugnier (Reydellet).—A very large Japanese, but rather flat in build; incurving florets of good substance, and grooved; colour pale rosy mauve, reverse silvery pink.

Papa Villard (Nonin).—Japanese, of good size, but not over-large; the florets are rather broad, curling at the tips; colour very deep rosy mauve, with silvery reverse.

Madame Desblanc (Reydellet).—An incurved Japanese with twisted intermingling grooved florets of medium width; a pretty shade of bright rosy pink.—C. HARMAN PAYNE.

ROYAL HORTICULTURAL SOCIETY.

FEBRUARY 9TH.

SCIENTIFIC COMMITTEE.—Present—Dr. M. T. Masters (in the chair); Rev. W. Wilks, Mr. Bennett-Poë, Mr. McLachlan, Mr. Veitch, Rev. G. H. Engleheart, Mr. Sutton, Mr. Shea, Mr. Douglas, Mr. Michael, and Rev. Prof. Henslow, Hon. Sec.

EVOLUTION COMMITTEE OF THE ROYAL SOCIETY.—Mr. Bateson called attention to the existence of the Evolution Committee of the Royal Society, the object of which is to promote accurate observations of facts relating to variation, heredity, selection, and other phenomena connected with the evolution of plants and animals. A horticultural sub-committee has been appointed to further the above objects in the hope that any persons engaged in practical horticulture may be willing to assist the Committee by communicating the results obtained, and allowing their operations to be observed and recorded. The Secretary of the Scientific Committee will be glad to receive any communications.

Current Blight.—Mr. Berry gave an interesting account of the history and progress of this destructive injury, especially to Black Currants in Kent. It was first observed some ten years ago, but has now reached alarming dimensions. Miss Ormerod recommended picking off and destroying the buds infested with the mite (*Phytoptus ribis*), the cause of the complaint. This was done, but last year a sudden development occurred, when picking became useless. The "Baldwin," a very heavy cropper, was the variety most seriously attacked. The "Red Budded Naples" were only slightly affected, but this variety is not a heavy cropper, and the fruit being more readily shed, it is not so useful as the Baldwin for market purposes. He suggested that experiments might be carried out at Chiswick to discover which was the most blight-resisting variety, as was done with other plants in Victoria in the Horticultural Gardens, so as to aid the fruit industry in Australia. Mr. McLachlan gave some account of the general habits of the *Phytopti*, remarking that this species was first noticed by Westwood some thirty years ago. It is nearly legless, and lives inside the bud, consequently it is very difficult to reach by means of insecticides. He could only recommend hand picking, unless a mite-proof variety could be found, as they had raised more or less phylloxera-proof Vines. Mr. Michael also contributed further details, observing that all the species of *Phytoptus* were parasites, and that while many species might attack the same plant, a single species might also live on many kinds. They were excessively minute, possessing only two pairs of legs instead of eight, and always protect themselves, so that it becomes a very difficult matter to reach them, as—e.g., in the curled-up edges of leaves, and within buds. It had been found that kerosene emulsion continuously applied by spraying had been more or less effective against *P. pyri*, but acari are far less sensitive to chemicals than insects. The eggs especially have a dense cuticle, so as to render it quite impervious to chemical action of insecticides. The only chance was to repeat the process of spraying, and catch the successive broods. The only thing absolutely fatal to acarid life was boiling water; eggs and all were destroyed at once. Mr. Berry, in replying, observed that the remedy hitherto suggested of cutting down the shoots of the Currant bushes attacked was quite useless. Mr. Veitch suggested that analysis of the branches of the varieties affected or otherwise might reveal some differences, but Mr. Wilks expressed himself as very doubtful of any appreciable differences being attainable even if they exist. Mr. Engleheart raised the question as to whether the Baldwin variety was weaker than others through over-propagation, but Mr. Michael added that *Phytopti* do not by any means prefer weaker plants, but are found more usually on perfectly healthy ones.

Carnations and Caterpillars.—Mr. Douglas exhibited some grubs received from Mr. White, Watlington, Kent, but the species was not readily determinable without being bred to the imago stage. It was suggested that gas lime should be used, as for wireworm, to destroy them.

Pines, Diseased.—Specimens of Scotch Fir and of *Abies Nordmanniana* were received from Mrs. Marshall, Skelwith Fold, Ambleside, the former attacked by the Pine beetle, the latter by *Kermes abietis*. This insect has always proved to be very fatal to this species of *Abies*, and the only

suggestion that could be made was to cut down the tree and burn all parts attacked. With regard to the Pine beetle, to encourage the multiplication of insectivorous birds as far as possible might be advantageous.

Cypripedium with Fungus.—Mr. Douglas exhibited specimens with the roots badly infested by a mycelium. Mr. Veitch at once recognised it as the result of a too damp atmosphere, recording the fact that having on one occasion to make a double roof, it caused so much damp that he lost many Orchids from the same cause, but on improving the atmosphere this completely prevented any recurrence of the fungus.

Primula obconica ♀ × *sinensis* ♂.—Mr. Shea showed a hybrid raised between these species. The flowers were pink, showing the extension of yellow from the throat, with curled petals, and bearing a decided scent of *sinensis*. The calyx, however, was entirely that of *obconica*. The general appearance was nearer that of the female parent. Mr. Shea proposes to re-cross with *sinensis*, and so intensify the features of the male parent.

Two-spotted Arum.—A fine example of this very common condition was received from Mr. Thomas Bennett, The Gardens, Shavington Hall, Market Drayton.

NEW DAHLIAS OF 1897.

NEW Dahlias, like new Chrysanthemums, are now introduced with such rapidity that one is often puzzled to know what to buy. Few Dahlias are bought by the general public the first year of distribution: 5s. and 7s. 6d. being sums above the average Dahlia grower's pocket, so it is usual to wait until the second season, when plants can be procured at 1s. 6d. to 2s. each. This is the price of most of the following, and the varieties mentioned may be considered the best of their class.

Taking the Cactus section first, as it is the most widely grown, I have included some varieties in it that are not in the latest list of Cactus Dahlias issued by the National Dahlia Society, but they may be in it another season: anyhow, their list is only binding at the show held at the Crystal Palace.

CACTUS.

Austin Cannell.—This is of a deep rose colour, with long spiral florets. The height attained is 3 feet.

African.—A deep velvety crimson variety, with the petals rather broad at the base, but well twisted at the ends. This is a fine variety that grows 4 feet high.

Bridesmaid.—The colour of this is pale rose, passing to yellow towards the centre; a lovely flower in a warm season; height 3 feet.

Cedric.—This variety produces long twisted petals of bright magenta colour. It is a splendid Dahlia, but appears to be little known. When well grown it is about 1 yard high.

Cycle.—This excellent variety is of a rich ruby red, paler at the tips. The height is 3½ feet.

Miss Webster.—A pure white true Cactus in a warm climate. The large flowers are borne on strong upright stems. It is admirable for cut flowers or decoration. The plant grows about 4 feet high.

Cinderella.—Dark purple in the centre, the colour of this variety is lighter towards the outside. A very fine floriferous Cactus, but the flowers hang down. Four feet is about the usual height.

Starfish.—A superb variety, with long twisted petals of orange scarlet. It flowers freely on long stout stems, and is probably the best Cactus Dahlia yet introduced. In height it is 4 feet.

Princess Ena.—A delightful combination of amber and reddish orange. The petals are well twisted, and flowers very freely produced on long stems; height, 4 feet.

Ophelia.—In colour this is bright cerise. The petals are long, and it is a splendid flower, the plant growing 3 feet high.

Mrs. Kingsley Foster.—This is a rich golden amber, and must become a great favourite for cut flowers, as it has long stiff stems. The height is 4 feet.

Ensign.—A useful variety, which produces good-shaped flowers of a bright carmine colour. Four feet is about the height.

Iona.—A fine terra cotta hued variety that has twisted petals, flowers freely produced on long stems. This will be a favourite for some years, and is 4 feet high.

Harry Stredwick.—This was sent out to supersede that grand variety, "Matchless," but has hardly succeeded. It is a very good Dahlia, deep maroon, and very free-flowering: the petals are narrower than Matchless.

Fantasy.—Though this is a beautiful flower when cut, it is a failure on the plant, the stems being very short. The colour is bright scarlet, passing to yellow at the base, the petals curling inwards. The plant is 4 feet high.

Aurora.—This is a miniature Cactus of salmon shade, with a bluish tint on the tips of the petals. The plant is most floriferous, and the variety is first-rate for cutting or garden decoration.

SHOW AND FANCY VARIETIES.

Sidney Humphries.—This is of a clear lilac colour. The petals are very good, and the flower is large and bold. It grows 3 feet high.

Queen of Autumn.—The large flowers of this variety are of a new shade of buff. It does not require much thinning, and will be much sought after for exhibition. In height it grows about 3 feet.

Countess.—A blush white, mottled with rosy purple towards the edge. Fine shell petals, high in the centre. It is the best introduction for several years. The height is 4 feet.

Daniel Cornish.—A large terra-cotta red flower, with a good centre. The plant does not require much pruning, and grows about 3 feet high.

Percy Mortimer.—This is a deep claret. It is a good, useful, distinct flower, and grows 3 feet high.

James Martin.—A bright scarlet, similar to the well-known variety W. H. Williams, but blooms earlier. The habit excellent.

POMPONS.

There were not a great many new Pompon varieties sent out last year, but some were very good.

Ganymede.—This is a true Pompon. The colour is fawn shaded with lilac. Nothing has been seen before like this variety in colour. The height is 3 feet.

Adrienne.—The colour of this is a dull red, and the form is good. The plant grows 3 feet high.

Clarissa.—A pale primrose coloured variety tipped with purple. It is fine in petal and outline, and may be termed a lovely Pompon, that is very free-flowering.

Dagmar.—This is crimson maroon, a fine Pompon, and quite distinct; neat in habit, and very free. The height is 2½ feet.

Opal.—Growing to a height of 2½ feet, this is a bright yellow with a white tip.

Dr. Jim.—This is a first-rate Pompon; fine close petal, good centre. The ground colour is white, heavily edged with dark purple; very free.

SINGLE VARIETIES.

Although the single Dahlias are so beautiful, they are giving way before the Cactus section. Three lovely new ones are Trilby, velvety maroon, with white tip; Polly Eccles, fawn, with a red disc; and Naomi Tighe, sulphur yellow, with an orange ring. These have received certificates from the N.D.S., and are all first-rate.—GEORGINA.

CHINESE PRIMROSES AT SWANLEY.

THERE is little room for adding additional honour to Messrs. Cannell and Sons in reference to Chinese Primroses. Ever in the van, growing and showing the finest strains, and well grown too, they have been entitled for years to the highest credit to which florists in relation to any flower may aspire. But grand as blooms of these greenhouse Primroses now are universally, and great the variety in colour of flowers, in character and colour of foliage, and general habit, yet does there seem to have been generally reached such high excellence that it is difficult to move further with these superbly improved strains.

As in other directions the Chinese Primrose is the flower of the immediate season, not only at Swanley but on the breezy hillside of the Eynsford seed farm. At either place the plants are in luxuriant bloom and in splendid form, whether of leaves or flowers, literally by thousands. Out at Eynsford perhaps richer and purer colours and finer forms may be seen, though stocks be identical. That is due to purer air, brighter light, and loftier surroundings at the latter place. To see the plants at either place, and at both especially, is indeed a joy for lovers of the beautiful in flowers just now. Visitors as they pass through, not only the Primrose but all other houses, see no inferior stocks. No matter whether a variety may be represented by fifty plants or 500 plants, all are alike true to character. That is the result of the most careful hybridising of the stock flowers with pollen only of the stock. Of natural fertilisation alone there is little, because insects are absent and the air is still. Aided, however, by the camel's-hair brush Nature does her work of fertilisation perfectly.

The present winter, so far, has been favourable to this operation, and no doubt capital seed crops will result. But breaking away from the giant blooms and traditional types of the *sinensis*, Messrs. Cannell and Sons have already worked what can be well described as a revolution in strains, and their new ones, derived from the now well-known common looking but remarkably free blooming pyramidal White Lady, literally entrance lovers of spring flowers such as Primulas present with their beauty and floriferousness. The intercrossing of the White Lady strain with fine or large flowered varieties has in but a year or two given splendid results. It was only the other day that this said White Lady was rejected at Swanley as rubbish. Mr. Robert Cannell, who controls the Eynsford establishment, on the other hand, saw in it great possibilities, and he raised stock of it, so that, true to the original character, there are white, lilac, and pink flowers with the same dark and finely cut leafage. The section has been termed decorative; not an inapt term, as anyone looking over the houses may see, for the new breaks give relatively fully three times the body of bloom from plants of the same age and dimensions that is furnished by plants of the older strains.

Of course the flowers on the White Lady strain are not large relatively. Those of the original form are smooth edged, much lobed, and rather small. The first break, after crossing with one of the large-flowered whites, gave a selection of still perfectly smooth-edged flowers, much finer and stouter, and quite round, the petals overlapping. This is a great advance on White Lady, and is now in commerce under the designation of *rotundiflora alba*. The tiers of whorls and pyramidal form of the seed parent is in this variety well maintained. There is also a pink or carmine round-flowered form.

Later crosses, using for pollen parents, especially those fine varieties Swanley White and Cannell's White, have resulted in the production of surprising selections having fringed flowers, the very finest of which are *pyramidalis grandiflora striata*, the flowers being here much flaked; *pyramidalis nigrafolia alba*, a fine advance; and finally as the most beautiful of all, *pyramidalis splendens alba*, the flowers of which are large, fringed, perfect in form, pure white, and borne in wonderful profusion. All are singularly floriferous, and give effects that in the bulk are surprisingly beautiful.

In all these strains the heads of bloom are thrown well above the foliage, when in truss form; when, however, the whorls develop, then the heads are indeed striking. As decorative plants for winter and spring use thus easily raised from seed, and grown in such small pots, no other plant can excel them. The development shown in these pyramidal forms so rapidly results largely from the employment as pollen parents of the finest of the large-flowered section; but there should be some limit to it all the same. Directly the large-flowered strain preponderates, and reduces to common form the present striking pyramidal habit, then there will be simple reversion to what is already so abundant that would indeed be a misfortune. The flowers of the most recent cross production are amply large, and of perfect form. When one fails another soon fills the gap; with the large-flowered trusses, big fallen blooms are not readily replaced.

The efforts of breeders should now be rather directed to the securing of other colours, but anything which destroys the elevated character of the florescence should be strictly avoided. But having said so much with respect to the new strain of Chinese Primroses, it is not possible to omit mention of the superb quality and beauty found in the older types. What splendid whites are White Perfection, on dark Fern foliage; Her Majesty, on semi-dark Fern leafage; White Swan, on pale green Fern leaves; and Eynsford White, on curled palmate leafage. There are also others. Flowers of fine form and delicate tint are found on Duchess of Fife, white, just tinted mauve, and some yet small breaks from other crosses have refined tints also. Very beautiful is Pink Queen on green Fern leaves, and the Queen Improved shows on the other distinct advance; but the finest of all the section is Cannell's Pink, really a grand variety, on light green foliage; flowers of great size and of a rich carmine hue.

Emperor is a deep ruddy carmine; and of reds there are Cannell's Red, intense colour; Glow-worm, having a pale ring round the eye, and a bluish shade in the crimson ground; Swanley Giant, even finer and deeper in colour than the preceding; and Kentish Fire brilliant red. The pretty lavender Lilacina, the reddish lilac Mary James, grand purples in diverse shades, magentas, and others, make up indeed a splendid show, to which may be added fine semi-doubles, especially a crimson-hued red, and the well-known Swanley Blue.—A. D.

APPLE LORD HINDLIP.

THIS Apple has been thrice placed before the Fruit Committee of the Royal Horticultural Society, the first time on January 14th, 1896, when an award of merit was unanimously granted; the second time on March 11th, 1897, when it was as unanimously confirmed; and the third time on February 8th, 1898, when a first-class certificate was accorded without a dissentient vote. This at once seems to exemplify the caution of the Fruit Committee, and emphasise the value of a distinct and good late dessert Apple. As will be seen by the illustration, the fruit is above medium size for a dessert Apple. It is broad towards the base, narrowing sharply towards the eye, which is very small and closed. The stalk is slender, and inserted in a deep round cavity, which is lined with russet, the end of the stalk being about level with the base of the fruit. This is yellowish green, covered with broken crimson streaks on the shaded side, these rising from the base, the colour deepening to glossy crimson on the sun side, flecked with russet. The flesh is yellowish, tender, sugary, with a pleasant, though not powerful, aroma. As we have previously said, this is a Rosemary Russet type of Apple. Some of the smoother fruits, however, bear a general resemblance to the American Mother, though much larger. This welcome addition to late dessert Apples was exhibited by Mr. John Watkins of Hereford.

LONDON'S OPEN SPACES.

II.—THE MAKING OF VICTORIA PARK.

VICTORIA Park is one of the largest, most beautiful, and most frequented of the "lungs" of London, and the man to whom London mainly owes its possession of that East End "beauty spot" is not only still living, but labouring as actively as ever in furtherance of Imperial as well as local interests. This is Sir Frederick Young, known and honoured throughout the British Empire as the great apostle of Imperial Federation, and whose special service to London should ever be gratefully remembered. Victoria Park belongs absolutely to the present reign. When Queen Victoria ascended the throne the space was part of a larger area known as "Bonner's Fields." Early in the year 1840 Mr. Joseph Hume (who was so well known in the House of Commons as an uncompromising critic of the estimates in the interests of economy) wrote to Sir Frederick Young's father, the late Mr. George Frederick Young, M.P., calling his attention to the fact that the Government had not long before received the sum of £100,000, the proceeds of the sale of York (now Stafford) House, from the trustees of the late Duke of York; and suggesting that it was a good opportunity for endeavouring to persuade Lord Melbourne's Government to appropriate a portion of the money for the purpose of obtaining "30 acres of open space" as a "playground" for the people of East London. "Certainly," was the reply of Mr. G. F. Young; "but why not try to get 300 acres?" There was no delay in

taking action. On receiving Mr. Hume's letter Mr. Young immediately invited a number of influential friends to meet at his house for the purpose of considering how the object in view could be best attained. It was resolved to have a public meeting of inhabitants of East London, and this took place a few weeks afterwards at the London Tavern, in Bishopsgate Street, under the presidency of the Earl of Glengall. Mr. Young drew up a memorial to the Queen, asking her approval to the scheme, and setting forth sundry cogent reasons in favour of it. This memorial was approved by a provisional Committee; and Sir Frederick Young, as Treasurer and Honorary Secretary of the Committee, got the memorial signed by 30,000 residents in the Tower Hamlets. At that time the "Tower Hamlets" comprised practically the whole of East London, containing about 400,000 inhabitants, who were represented in the House of Commons by two members. That population has since grown to about a million, and thirteen representatives in Parliament.

The memorial was a great success, and made a great impression on the Government. Lord Duncannon, then at the head of the Department of Woods and Forests, was induced to view the scheme so favourably as to promote legislation on the subject. Parliament passed the Bill introduced for the purpose, and the new park received the Queen's name. It was a great triumph of perseverance and devoted effort; and it conferred on East London a boon that increases in value with advancing years.

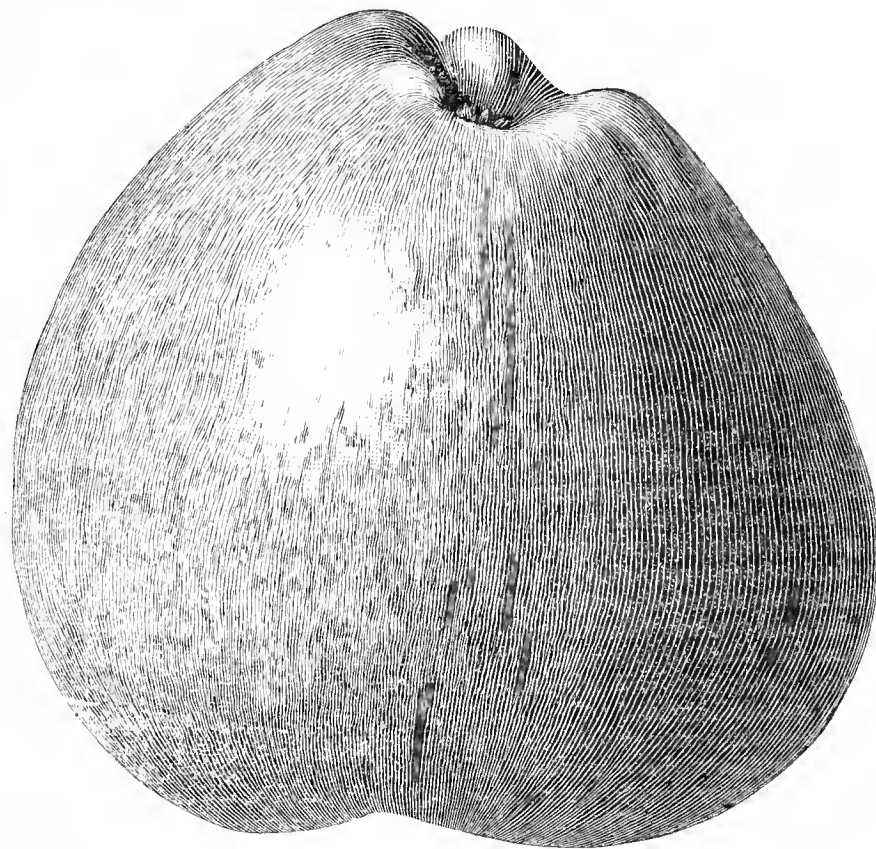


FIG. 23.—APPLE, LORD HINDLIP.

Mr. Joseph Hume's initiatory letter was written to Mr. George Frederick Young early in 1840; but it was not until March, 1842, that the Bill was introduced into the House of Commons, a change of Government having taken place meanwhile. Just midway between these two dates Mr. Hume, who had apparently not much confidence in officialdom, wrote another characteristic and interesting letter to Mr. Young, as follows:

Bryanston Square, 8th March, 1841.

My dear Sir,—In reference to the application made to the Government from the Tower Hamlets for an open place for recreation, I wish to know whether you have had any answer, or have taken any further steps to forward that very desirable object. Your experience must inform you that unless you persevere and remind, from time to time, public men of their duties, and of the demands made on them, you will find them rather disposed to save themselves the trouble, unless they are to be specially benefited by the object desired to be effected. I do not state this as a reflection on the present Government, but as applicable to all Governments, and hence the necessity of renewing the application. I have effected the purchase of Primrose Hill for the use of the public for ever, a most valuable object; and I have been constant in my advocacy, publicly and privately, since June, 1837. I beg you will do me the favour to let me have a copy of the petition or address to the Crown, with a report of the proceedings at the public meeting, of the presentation, &c., if you have them, that I may see how far I can forward your object. You will learn that I have also got the Regalia in the Tower open to the public at 6d. each, instead of 2s. each, and that we are thus gradually advancing in the right path. Why should the interests of the population of the Tower Hamlets be neglected?

—Yours sincerely,

JOSEPH HUME.

From the above letter it will be seen that the making of Victoria Park and the dedication of Primrose Hill to the use of the public "for ever" were practically contemporaneous. Sir Robert Peel received Victoria Park as a legacy from Lord Melbourne, and there was no unnecessary delay in giving legislative authority for crowning the beneficent labours of Sir Frederick Young and his coadjutors. It was found that the 300 acres, which Mr. George Frederick Young had told his son to try and secure, had not been obtained; "but," said Sir Frederick to a friend who was once talking to him about the struggle, "we did get 298, which satisfied us."

Those who know Victoria Park now can conceive no idea of the squalid, wretched district it was in early times. It was really a township of wretched hovels, popularly known as "Botany Bay" from the fact that it supplied every year a goodly number of unwilling emigrants to the penal settlement of that name. Now it is indeed a pleasure ground worthy the great metropolis. Its avenues, when they attain an ampler growth, will be really superb. It has a lake, or, rather, a succession of lakes, used for bathing and boating, and swarming with waterfowl, while pleasant walks abound, and it is gay with green turf, shrubs, and flowers. One of the lakes is set apart for miniature yacht sailing, and on a summer evening, when a puff of wind is to be had, toy boats and yachts of all rigs and sizes whiten the waters. There is even a yacht club, whose members compete with their tiny craft for various prizes. Cricketing and other sports are freely indulged in on spaces set apart for them, and, according to the last general report of the County Council, facilities for these pleasures are to be increased.

One part of the original plan, however, was never carried out. This was a fine boulevard stretching away from Victoria Park to Limehouse Church. The necessary land could then have been obtained for £5000, but all the available funds had been appropriated for the creation of the park itself. The Commissioners of Woods and Forests approved of the proposed boulevard, and not only had two green lines marked on the map to indicate the site of the road suggested by Sir Frederick Young, but got a clause inserted in the Act of Parliament of the railway company (some time afterwards constructing the Epping Forest line from Fenchurch Street to Woodford) to put ornamental arches to the bridge which would cross this proposed line of road, in order to give a more picturesque appearance to the scene if the project should ever be realised. These ornamental arches still exist, and are, unfortunately, the only relics that remain of the "boulevard" scheme. But Sir Frederick Young has abundant reason to be satisfied with the results actually obtained, and no other man in London has a finer monument to his efforts for the public welfare than he possesses in Victoria Park.—("Lloyd's News.")

THE YOUNG GARDENERS' DOMAIN.

PROPAGATING AND GROWING CROTONS.

Now is a good time to insert Croton cuttings. Healthy well-coloured bits should be selected about 3 inches in length, cut square below a joint, and inserted in thumb pots; only two or three leaves need be taken from the base of the cuttings. The soil may consist of equal parts of fine loam, leaf mould, and peat dust, with a free sprinkling of silver sand. A dash of sand may also be placed on the surface of the soil in the pots, this falling round the cuttings in the process of dibbing them in. I find it desirable when inserting the cuttings to have two or three leaves below the level of the soil. These add greatly to the symmetry of the future plant, and will adhere to it all through the season if the plants are carefully attended to.

Place the cutting pots in a propagating box with a bottom heat of 70°. In about three weeks the cuttings will be rooted, though some may be longer, much depending on the hardness or softness of the different varieties. The young plants may be placed on a shelf near the glass in a low propagating house. In about a week or nine days they will have become accustomed to the exposure, and may be placed singly in 3-inch pots, using a compost of one part fibry loam and peat, half a part leaf mould, and a quarter part silver sand. I think the plants are better without manure at this stage; pot rather firmly, but not hard. The plants may be placed on a shelf as before advised, lightly syringed two or three times on bright days, and kept damp between the pots. Little or no water will be required by the soil until the plants begin to grow. The temperature may be 60° to 65° night, 70° to 75° by day, with a rise of 5° from sun heat.

About the middle of May the 3-inch pots will be filled with roots, and the plants may be transferred into the 5 and 6-inch sizes, according to the strength of the plants, using the same compost as before, but adding a sprinkling of artificial manure, such as Clay's or Thomson's. The plants should be shaded and well syringed until they are growing vigorously, when they may be removed to a larger and lighter house. I think the plants are best in 5 and 6-inch pots the first season, as this is a useful size for table work. If they become root-bound it is advisable to point a little manure into the surface soil; this will keep them going through the rest of the season. If large plants are required those alluded to may be shifted the following spring.

Another batch may be propagated about the middle of June and treated as before, but keeping them in 3-inch pots. These are a very useful size for corner plants in table decoration if grown in fours and sixes of different varieties. Crotons revel in abundance of heat and moisture through the growing season. A sharp look out must be kept for mealy bug and scale. The former may be kept down by looking over all the plants once a week, and touching the bug with a little methylated spirit on a small brush. Scale should be pushed off with a pointed stick, afterwards dipping the plants in a weak solution of softsoap and paraffin or other insecticide.—A LOVER OF THE CRAFT.

FUNGUS PESTS.

ONE of the most familiar fungoid enemies a gardener has to contend with is the Potato disease. That this is brought about by a minute parasitic fungus is now generally recognised. Though it is so small—almost undiscernible with the unaided eye—its work of destruction is none the less rapid. As in the case of mildew, if left unrestrained in its early

attack it is seldom that anything beneficial can be done with it. At all events this is my experience.

This pest attacks the under surface of the leaves, so I think we may learn by this that light, the greatest necessity to the well-being of all green plants, is not essential for the growth and reproduction of this fungus. Were it otherwise the large quantity of haulm and leaves generally produced would act as a kind of preventive. The work and anxiety of the gardener would then be greatly alleviated. But methods and remedies have to be adopted to mitigate (if possible) the voracious attack of this insidious enemy. Unfortunately being so minute, and having such great power of reproduction, it often gains a firm hold before it is detected, which entails greater difficulty, if not impossibility, of eradication. One thing in our favour is, that it has a strong and peculiar scent, and those who know the smell often detect its presence thereby. As soon as the spores are ripe millions of them are wafted by the wind, and brought into contact with more of their favourite prey. Thus I should say the epidemic, as we may term it, travels. Others fall to the ground, and by heavy rain are washed down to the tubers, where they quickly germinate, and cause the well-known disease.

Probably some of the spores remain in the soil, and as they are capable of retaining vitality some length of time, it would be wise not to plant the same piece of ground (should other be at command) with Potatoes twice in succession. When digging Potatoes it is a general practice with some persons to throw the infected tubers back on the surface and leave them. This in my opinion is a bad plan, for in the diseased part there are always a number of spores which might easily get back into the soil, and serve as a stock for future infestations. It would be avoiding a great risk by providing a basket to receive them, so that they may be carried away and burned. I think it quite probable the disease is increased by the decaying tubers accidentally left in the ground, for we find scarcely any decay without one or other kind of fungus being present. We have not far to look for these phenomena if we have a rubbish heap. It seems that as soon as one life departs and its structure and decay commences, other life is brought into existence, and the decaying substances supply food for the sustenance of fungi, when they return to the earth the element that has been taken therefrom. In this sense fungi are valuable servants to mankind.

The remedy I have seen used against the Potato disease was a mixture of bluestone or vitriol (sulphate of copper), 5 lbs., broken very fine and dissolved in boiling water, in a wooden vessel; fresh lime, 5 lbs., dissolved in another vessel, then both thoroughly mixed and strained through a piece of canvas to take out all remaining lumps, and added to 25 gallons of water. This preparation syringed carefully among the haulm certainly hindered the progress of the disease to a large extent.—ASPIRANT.



FRUIT FORCING.

Cucumbers.—Examine the plants in bearing once or twice a week, removing bad leaves and exhausted growths, thinning the shoots, and removing old and deformed fruits. Thin the old growths, so as to admit of training-in young shoots, overcrowding and overcropping being very prejudicial. In securing the shoots to the trellis do not tie them too tightly, but allow room for development. Plants that have been in bearing some time should have the surface soil removed, and previously warmed fresh soil added. Turfy loam, with a fourth of well-decayed manure, will answer, or the turfy loam without an admixture of manure, seeking vigour by rich surface dressings or liquid manure. The bottom heat should not be allowed to fall below 75° or exceed 90°, 80° to 85° being suitable; top heat 65° to 70° at night, 70° to 75° by day, rising to 85° or 90° from sun heat, closing early in the afternoon, damping the pathways on bright mornings and at closing time.

Melons.—The plants in the Melon house may be grown on a ridge of compost the whole length of the house or bed, 2 feet wide at the base, with the top flattened so as to give a depth of 10 to 12 inches, or on hillocks about 2½ feet apart formed similarly, the soil being made rather firm, and when warm the plants may be turned out, firming the compost well, and raising it within half an inch of the seed leaves. The plants may be placed 2½ to 3 feet apart, the primary shoot being taken up without stopping until fully two-thirds the distance they are intended to travel is reached, then pinch out the points of each. When three or four lateral joints are made, the points should be taken out. Some varieties will show fruit on the first laterals, and as early Melons are an all-important consideration, let them remain, taking out the point at the joint above them. To allow all the laterals to remain would very much overcrowd the foliage, therefore rub off every alternate one whilst quite young. After stopping the first laterals, the sub-laterals will show fruit at the second or third joint. The growths should be trained thinly and regularly, so that every part of the trellis is covered evenly with foliage and fruit. The plants will require little water as yet, nevertheless maintain the soil in a moist state, avoiding anything approaching to saturation. Sprinkle the paths in the morning of bright

days, and again at closing time or early in the afternoon. Ventilate carefully, avoiding cold currents of air. When the air is sharp, some hexagon netting or scrim canvas placed over the ventilators will break the force of cutting winds. Maintain a night temperature of 65° to 70°, 5° less in severe weather, 75° by day, raising to 85° or 90° from sun heat, keeping the bottom heat steady at 80°.

Melons in Pits or Frames.—Plants with the growths trained over the surface of the bed being stopped at the second leaf will produce two or more shoots, but two are sufficient, rubbing off the others. Stop the two shoots at two joints of growth; this will give four shoots, taking two to the front and two to the back of the frame. Besides these other shoots may appear near the collar; rub them off whilst quite young, and do not encourage any laterals nearer the stem than 6 inches. This will keep the collar clear. Stop the principal shoots when within a foot of the sides of the frame, and thus throw vigour into the laterals, which will show fruit at the second or third joint; or if not, stop them to induce sub-laterals and a plentiful show for fruit, bearing shoots being stopped one joint beyond the fruit. Cover the lights with double mats at night, and attend to the linings regularly, renewing the old ones as required. Prepare material for making up fresh beds. About a fortnight before it is desired to make up the beds the manure and leaves should be thoroughly incorporated. In a few days it will be seen whether there is sufficient moisture to produce decomposition, fermentation being the result; if not, turn the whole, sprinkling with water so as to moisten the mass, and when in good heat turn again, outside to inside, two or three turnings being required at intervals of a few days to secure sweetened material. The bottom heat of fermenting beds should be 85° to 90°.

Peaches and Nectarines.—*Earliest Forced House.*—This applies to midseason varieties started in December, and to early varieties started a month afterwards. Both will ripen the fruit early in May, but if the very early varieties were set to work early in December the fruit will ripen towards the end of April, or even earlier with sharp forcing, which we do not advise. The trees must be syringed every morning and afternoon to check red spider and other pests. If, however, the weather be dull the syringing must be practised early in the afternoon, so as to allow the trees to become fairly dry before night, or if that does not take place the afternoon syringing should be dispensed with, damping the paths and borders instead, as keeping the trees dripping with water through the night causes weak growth and thin foliage. Outside borders must have protection from the cold, a light mulching of dry partially decayed manure is sufficient. Water inside borders as required, using liquid manure, which will assist the trees in swelling the fruit, especially in the case of weakly trees long subjected to forcing. Vigorous trees will not require any stimulants, excessive vigour being fatal to the fruit satisfactorily passing the stoning period. When the fruits are the size of small marbles thinning may commence, but removing a few only at a time, beginning with those that are badly placed and the least promising. Continue disbudding, taking care to leave a growth at the base of each bearing shoot, and another at the extremity, or at least on a level with the fruit. The shoots retained for attracting the sap to the fruit should be stopped at the second or third leaf, but the basal growths must be trained in to take the place of those now bearing fruit. Shoots upon extensions must be left 12 to 15 inches distance apart to form the bearing wood of the future. It is a great mistake to crowd the trees with growths for which there is not space to allow of full exposure to light and air, therefore avoid overcrowding, seeking to maintain an equal balance of growth throughout the trees, and its solidification by judicious ventilation.

Second Early House.—Let fertilisation still be practised, gently brushing the flowers or distributing the pollen by shaking the trellis, but a camel's-hair brush secures this most efficiently. Admit air freely on all favourable occasions, avoiding, however, cold currents, and provide a little ventilation constantly at the top of the house. Continue the night temperature at 50°, 45° on cold nights, 55° by day artificially, and 60° to 65° from sun heat, not allowing a rise above 65° without a free circulation of air. Syringe the trees when the flowers fade and the fruit is set, moderately, however, at first, so as to assist the trees in casting off the remains of the blossoms. Up to the fruit setting a genial condition of the atmosphere may be secured by damping surfaces other than the trees in the morning and afternoon.

Houses Started in February.—The trees started early in the month are swelling their buds rapidly. Cease syringing when they show colour. Maintain, however, a good moisture by damping the paths and borders two or three times a day, as the weather may dictate, avoiding a close stagnant atmosphere. If the flowers are numerous thin them by rubbing the hand downwards on the under side of the shoots, which will strengthen the remainder. Examine the trees closely, and if there be any aphides fumigate or vaporise with tobacco or nicotine, so as to destroy the pests before the flowers expand. Continue the temperature at 40° to 45° at night and 50° by day, above which ventilate freely. When the flowers expand raise the temperature to 50° at night, 55° by day, and 60° to 65° from sun heat, with free ventilation. On cold nights the temperature may fall to 45° or even less, also 50° by day, allowing a little ventilation constantly at the top of the house.

THE KITCHEN GARDEN.

Garlic and Shallots.—It is only by planting as soon as the ground can be properly prepared that these roots can be grown to perfection. They invariably mature early in the summer. Prepare the ground by digging in a liberal dressing of short decayed manure, and make it fine, firm, and level. The best crops result from planting medium-sized to large, unbroken "bulbs," but if small divisions are planted most of these will

attain to a large or exhibition size, not breaking up. Let the rows be grown 10 inches to 12 inches apart, and plant 6 inches to 8 inches asunder in the rows.

Parsley.—In gardens where it is difficult to obtain good rows of Parsley by sowing now, or later, where the plants are to remain, the plan of raising the requisite number of plants under glass should be adopted. Sow the seeds thinly in either boxes or a bed of soil over a mild hotbed, and do not coddle the plants. When these have formed a strong tap root all may be pricked directly into sheltered borders, arranging the plants 6 inches to 9 inches asunder in rows 1 foot apart. Sink the tap roots to their full depth and fix them well, further protecting from slugs and cold frosty winds.

Parsnips.—One of the effects of the mild winter is the early starting into growth of Parsnips, large quantities of which are undug. It is possible there may yet be a scarcity of green vegetables, and Parsnips will then be in greater demand. The roots ought to be lifted, stored in a heap in a cool shady place, and covered with soil, sand, or ashes. Large Parsnips are of less value than the medium-sized to small roots, hence the breaking away from the old custom of sowing the seed as early in February as the state of the ground permitted. If the open weather continues seeds may be sown now. Especially is this desirable in gardens where the ground ought not to be trampled on if in a somewhat wet condition. If the selected plot of ground was well manured for a preceding surface-rooting crop no manure need be added now. Make the ground as fine as possible to a good depth, and sow the seed thinly in shallow drills 15 inches apart.

Rhubarb.—The crowns of early Rhubarb are on the point of bursting and if any fresh beds or rows are to be formed, this should be done, weather permitting, soon. The finest and most succulent stalks are produced by comparatively young plants, and the poorest from exhausted clumps. Some of the latter should, therefore, be lifted, forced, and destroyed each season, and an equal number of fresh plants be put out. Rhubarb should have heavily manured, double-dug sites, and the stations ought to be 3 feet apart each way. The best early red varieties, with a few clumps of Victoria, meet the requirements of most establishments, and if there is a stock of these, lift some of the older plants, divide into as many pieces as possible—one good crown and a few roots being enough for each division. Replant either singly or in groups of threes, sinking them so that only the crowns show above the ground, fix the soil firmly about the roots, level over, and mulch with strawy manure. Cut out flower stems if these unfortunately appear, but do not draw any stalks for use during the first season. Rhubarb may be forwarded considerably by having heaps of strawy litter banked loosely over the clumps, covering the litter, and adding more occasionally.

Tomatoes.—Young plants with their roots confined in small pots draw up rapidly, especially in dull sunless weather. From these small pots they should be either shifted into 6-inch or planted direct where they are to fruit, doing this before they become badly root-bound. There are various methods of culture open to private gardeners. Excellent crops can be obtained from plants with their roots principally or solely in 10-inch to 12-inch pots, but those who favour this practice must be prepared to apply abundance of water and liquid manure. Boxes a foot or so in depth answer better than pots, because the soil does not dry so quickly as in pots. Pots or boxes can be arranged on front stagings, and the plants trained up the roof, or on pit walls and central stagings, where they may be supported with strong stakes. Tomatoes succeed admirably when planted out 1 foot apart in a narrow ridge of soil arranged along the fronts of houses, but in such positions they must be well looked after, receiving abundance of water and liquid manure, with occasional mulchings. They are also greatly assisted by being allowed to root out from pots, boxes, or ridges of soil into a good thickness of ashes, which should be kept constantly moist with liquid manure. In all cases make the soil firm about the roots, and from the first keep it steadily moist. Tomatoes succeed well in vineries during the first two seasons, but it is a waste of labour trying to fruit them under a heavy canopy of Vine leaves. If, instead of planting them out, the Tomatoes are placed in 11-inch pots arranged across the house midway between the young Vines, allowing them to root out into the border after the fruit has commenced setting, they will produce heavy crops without detriment to the Grape Vines. At this time of year fire heat is necessary for Tomato plants. A night temperature of 55° to 60°, with a rise of 10° in the daytime, suffices, and a little top air should be given during the warmest part of the day.

TRADE CATALOGUES RECEIVED.

Dickson, Brown & Tait, Corporation Street, Manchester.—*Farm Seeds.*

J. Green, Dereham.—*Dahlia*s.

W. W. Johnson & Son, Ltd, Boston, Lincs.—*Seeds.*

Leeds Orchid Co., Roundhay, Leeds.—*Orchids.*

G. Masters, East Molesey.—*Seeds.*

E. Morse, Epsom.—*Seeds.*

J. R. Pearson & Sons, Chilwell, Notts.—*Pelargoniums.*

Ant. Roozen & Sons, Overveen, Haarlem.—*Bulbs and Seeds.*

J. Russell, Richmond, Surrey.—*Seeds.*

Sutton & Sons, Reading.—*Farmers' Year Book.*

Louis Van Houte, Père, Ghent.—*Begonias and Gloxinias.*

Vilmorin, Andrieux, & Co., 4, Quai de la Megisserie, Paris.—*Chrysanthemums.*

E. Webb & Sons, Wordsley.—*Farm Seeds.*

THE BEE-KEEPER.

HOW TO PROCURE A SURPLUS.

THE chief aim of bee-keepers is to obtain as much honey as possible from their bees. But how this is to be done is a question that should be satisfactorily answered by all who have studied the various systems of bee management and have made the business a success. Others there are who are beginners and are anxious to obtain superior samples of both comb and run honey, but who have their doubt as to which system is the best.

One of the greatest mistakes is to confine the bees in small hives and allow them to swarm during the best part of the honey flow and then expect a surplus. How often one hears of bee-keepers who, after a limited experience with bees in unsuitable hives, or through careless management, fail to obtain a surplus, give up the business in disgust, instead of it proving a remunerative pastime, which it invariably does if worked on the right lines. It is, however, not surprising that such is the case when one takes into consideration the difference of opinion still existing among practical bee-keepers.

For instance, one bee-keeper may advocate large frames of greater length and depth than those favoured by an equally successful apiarist. Both may obtain a large and satisfactory surplus. It does not prove that either is wrong, but may be summed up in one word—management. Therein lies the whole secret of success. It is immaterial to those who pay close attention to their bees and know when extra room is required, and who provide them with it at the right time, whether the hives are large or small. In the former case the space may be restricted by removing all frames not covered by the bees, and in the latter by giving more room. In each instance the surplus will be satisfactory, if that all-important factor, the weather, is favourable. In our recent notes on doubling we fully explained this system of obtaining a surplus of run honey, and also gave the dimensions of the hive, super, and frames most favoured by us, and which are now extensively used throughout this country.

SHALLOW FRAMES FOR SUPERS.

Shallow frames for obtaining a surplus have been much used of late years by advanced bee-keepers. They are of the same length as those used in the body of the hive, but are 3 inches less in depth. They are always placed in the super, directly over the brood nest. The advantage of using shallow frames instead of full sized ones in the super is appreciated by many bee-keepers during an inclement season, when honey is not coming in freely, as bees will often store a surplus (more particularly in this observed early in the season) which would otherwise be lost. If the weather is favourable, and honey is coming in somewhat freely, they require more attention than ordinary frames. There being so much less storage space the frames are filled more rapidly, and if extra room is not provided at the right time, the bees will have the swarming mania, and little surplus will be stored.

When the frames are three parts full they should be lifted bodily off the hive, and a crate of empty frames placed underneath them. The bees will then draw out the foundation, with which they should always be supplied, and will in due course fill them with honey, and at the same time finish off those placed on the top. They should be examined as often as necessary, and when the second crate of frames is three parts full place another crate of empty ones underneath. If the colony is extra strong in bees it may be necessary to place two empty crates on the hive within a few days of each other. We have sometimes had half a dozen crates of shallow frames on a hive at one time, as it is not advisable to remove the frames for extracting until the honey is well ripened, which it usually is when sealed over. There is no place where the honey will keep in such good condition as on the hive.

FULL-SIZED FRAMES FOR SURPLUS.

Although the shallow frame has a slight advantage over the full-sized one, as used in the brood nest, it has the disadvantage of requiring more attention. There is also more labour in extracting, owing to the fact of the frames being smaller. For this reason, and also because the full-sized frame when filled with worker comb is useful for so many purposes. It is not often necessary to place more than one super of nine full-sized frames on a strong stock, if there are some fully drawn out tough old spare combs in stock, as directly the frames are full and about three-parts sealed over they may be lifted out one at a time and the bees brushed off with a feather. But if a carbolie cloth is placed over the top of the frames a few minutes before handling them the majority of the bees will beat a retreat, and the operator will not be interfered with.

The centre combs are always filled first; these may be removed and their places filled with the outside combs that may not be sealed over, the remaining space being filled with empty combs. By

this means the bees are kept constantly at work, and but little swarming will take place. It is necessary to use queen excluder zinc between the brood nest and the super, or the above system will end in failure.—AN ENGLISH BEE-KEEPER.

A WONDERFUL COLONY.

ON page 113 "An English Bee-keeper," referring to what I said about a hive belonging to a member of our Association, which on March 3rd covered nine frames 18 inches by 9 inches deep, and that several drones were observed, and that I said by the 1st of April or the first week in May would crowd the hive. "An English Bee-keeper" says, "I then asked him a question which he has not answered—namely, if according to his own showing a queen would lay from 3000 to 4000 eggs per day, what had become of the bees? On March 3rd the bees covered nine frames, whereas by the first week in May they only covered twelve frames. From the former date to the latter is eight weeks; 3500 eggs laid daily would amount to 196,000. Perhaps 'G. H.' will inform your readers what had become of the bees from this wonderful colony."

The above question implies that "An English Bee-keeper" does not know that in March and April there are many cold days and nights which retard the laying powers of the queen. There are times when the queen lays very few eggs, brought about by the weather, absence of nectar in the flowers, or the little pollen obtained for the wants of the hive. From observation I have proved that egg-laying is governed by the income from the outside.

Then the gales of wind and cold rains destroy thousands of our bees in the early months of the year; too frequently have I had demonstration of this fact. How many bee-keepers have felt a pang when they have seen hundreds of dead and dying bees strewn on the ground around the hives never to rise again, lashed down by the storms? Again, how many bees of this wonderful colony would die of old age from the 3rd of March to the first week of May? "An English Bee-keeper" writes as though I said a queen would lay from 3000 to 4000 eggs in a day in the month of March and the two first weeks in April. Such a thing I never said or thought of. These are the words I used (page 136, February 11th, 1897), "Is a hive with ten standard frames large enough for the requirements of a prolific queen, laying from 3000 to 4000 eggs in the height of the season?"

HOW TO TEST THE LAYING POWERS OF THE QUEEN.

If anyone wishes to prove for himself, put 7 lbs. of bees in a full-combed hive, where a young and vigorous queen (if a hybrid so much the better) has room to lay 3000 to 4000 eggs per day. There are about fifty cells to the inch, both sides of the comb. Let this be done when the weather is fine, with plenty of food in the hive, and a good income from the outside. Measure up on the twentieth day, and if you do not find the above results, your experience will be different from mine. I should like to ask "An E. B." if he has tested the laying powers of a queen, and with what result.

A SUPPOSED MISTAKE.

I went to inspect the wonderful hive referred to in a previous issue by "An E. B.," and, as I expected, it crowded the hive the first week in May. No mistake had been made, the hive had a vigorous queen, and was prosperous in every way. But what has become of the bees? I have explained above what has become of some of them, and the rest entered the supers in good time. "An E. B." told us some time ago they would not do so till the honey flow is nearly over. A mistake was made in my notes last week; instead of reading Mrs. Simmon's hive, it should have read Mr. Simmon's hive.—GEORGE HOWDENSHERE.



* All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **8, Rose Hill Road, Wandsworth, S.W.**, and **NOT** to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Equal Prizes (Forlorn).—We are obliged by your letter. No good result could ensue by discussing the other matter alluded to so long after the event, and more especially as you say the error has been rectified. No judges are infallible, though some make fewer mistakes than others. We wish you still greater success.

American Productions (Amateur).—You have omitted your name and address. If you supply them, we will give you what information we can; it is not a question suitable for publication.

Pelargonium Stem Killed (T. K.).—The rootstock and stem have been killed by some caustic substance, evidently potash, but there are other substances that give the purple colour. The substance, whatever it may have been, has been poured on the roots, the tissues being destroyed there and for some distance up the stem, while the radiating parts are quite healthy and normal. There is no disease from gall or grub attacks in the specimen.

Zonal Pelargoniums (W. T.).—To afford large trusses with fine petals, young plants are much the best. Sturdy plants of last year's raising from cuttings, and now well established in 4½ or 5-inch pots, if shifted as needed, kept steadily growing, the weaker shoots removed, and the strong retained, produce the best trusses. Pinch the buds off till about six weeks before show time, and then the growths above them, and with judicious feeding after this, large trusses and fine blooms should be forthcoming.

Chemical Manures (A. H.).—We fail to perceive any date of the meeting. In our experience, and it is not short, the effects of artificial manures is largely dependent on the seasons. We have known the money expended on them in dozens of experiments wasted, and guided by these particular experiments alone, which would not be fair, it might be advised that chemicals are of no use. We do not know of any fund being established for providing the sinews of war in what some people regard, though perhaps incorrectly, as a trade propaganda.

Applying Superphosphate to Lawns (F. L.).—Now is the time to apply bone superphosphate to lawns. It is better to add about a fifth part of sulphate of ammonia to the superphosphate, as this quickens its action, or if a light soil, use nitrate of soda instead of the sulphate of ammonia. Three and a half pounds of the mixture suffice per square rod, or if very mossy and but little grass double the quantity may be used. It will brown the lawn, at least it will become so from the dead moss, but the brownness will soon disappear in consequence of the grass growing.

Potatoes for Showing (F. C.).—The best soil for growing Potatoes is a rather light loam, well enriched in the previous autumn with decayed stable or a farmyard manure, and the land again forked over during dry weather in the spring, so as to secure an even blend of the ingredients. Top-dress with either soot (a peck per rod) or rape meal (7 lbs. per rod) just before setting. Choose sets of 2 ozs. to 3 ozs. in weight, reduce the eyes to one or at most two, reserving the strongest, and set during the early part of April, affording the plants ample room. Scattering a handful of superphosphate of lime over a length of 5 or 6 yards of drill when planting is good practice at the setting. Scab may be introduced on the sets, and the best disinfectant is corrosive sublimate (a strong poison), 1 part in 1000 parts of water, steeping the sets for an hour and a half before setting, and not using them for any other purpose but planting.

Pruning Drawn and "Leggy" Rhododendrons (E. Stroud).—The shrubs will now (after two years growth from transplanting) have become well established in the fresh material, and hence likely to push freely and sturdily after being pruned. This is best done during moist and mild weather in April, in such manner as to leave little beyond bare stumps, in order to force the dormant buds into activity at the beginning of summer, and thus secure a good growth with a prospect of its ripening well. The cutting down will do away with all prospect of flowers for the current year, and probably the following season. It appears, however, that you wish to have flowers, as you refer to "cutting down after flowering." This we have frequently done, with the result of securing a feeble growth the first season and no flowers the following year. We have also cut down a portion of the shrubs one season in April, others the next, and so on, until the beds were gone through and the shrubs brought into shape, while there have always been some flowers. Take the course most likely to be in accord with the views and requirements of the proprietor.

Diseased Carnations (E. N.).—The plants are infested with the "fairy-ring spots" of the Carnation fungus (*Heterosporium echinulatum*), first described in England twenty-eight years ago by Rev. M. J. Berkeley, and was introduced from the continent of Europe, thence, in recent years, into North America. The spores are brown in colour, and prickly, as the specific name implies, and when produced in great abundance, as in your case, darken the spot upon the leaf, due to the threads and the spores. The growth of the fungus from the centre of the spot is centrifugal, and the dark colour generally arranged in concentric lines or rings, fancifully representing a miniature fairy ring. The damp of the frame has probably given the fungus a great advantage. The essential conditions of growing healthy Carnations are—foliage free from heavy moisture, and free circulation of air about the plants on all sides. Burn all the plants which are in the condition of those sent to us, as they cannot possibly be cured. Cut off the worst affected parts of the remainder and burn them. Dust the plants with the advertised fungicides containing sulphate of copper, or spray with Bordeaux mixture, so frequently quoted in our columns. Above all give more air; the plants cannot have too much of this, guarding against sharp currents, nor of light.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on

which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (W. W.)—1, *Begonia hydrocotylifolia*; 2, *Fuchsia fulgens*; 3, *Pteris cristata albo-lineata*; 4, *P. serrulata*; 5, *Adiantum formosum*; 6, *A. scutum*. (J. C.)—1, *Garrya elliptica*; 2, *Ceanothus rigidus*; 3, *Berberis Darwini*. (W. L.)—1, *Adiantum Collisi*; 2, *A. rubellum*; 3, *A. setulosum*; 4, *Scolopendrium vulgare cristatum*; 5, *Cyrtomium falcatum*. (D. S.)—1, *Spiraea palmata*; 2, *Cypripedium Spicerianum*; 3, a variety of *Dendrobium Wardianum*; 4, *Cypripedium insigne*. (E. R. D.)—1, *Adiantum Pacotti*; 2, *Cypripedium villosum*; 3, *Ficus repens*; 4, *Prunus sinensis flore-pleno*; 5, *Euphorbia splendens*; 6, specimen insufficient, send when in flower.

COVENT GARDEN MARKET.—FEB. 16TH.

FRUIT.

			s. d.	s. d.					s. d.	s. d.		
Apples, $\frac{1}{2}$ sieve	1	6 to 4	0	Grapes, lb....	...	...	2	0 to 3	0	
Cobs	21	0	12	6	Lemons, case ...	...	11	0	14	0
Filberts, 100 lbs.	0	0	0	0	St. Michael's Pines, each	...	2	6	5	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	0 0	Mustard and Cress, punnet	0 2	0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	6 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzonera, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallo's, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, lb. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.				
Arbor Vitæ, var., doz. ...	6	0 to 36	0	Ferns, var., doz. ...	4	0 to 18	0		
Aspidistra, doz. ...	18	0	36	0	Ferns, small, 100 ...	4	0	8	0
Aspidistra, specimen ...	5	0	10	6	Ficus elastica, each...	1	0	7	0
Azalea, per doz.	30	0	42	0	Foliage plants, var., each	1	0	5	0
Cineraria, per doz. ...	8	0	12	0	Hyacinths, doz. pots ...	8	0	12	0
Cyclamen, per doz ...	9	0	18	0	Lilium Harrisii, doz....	12	0	18	0
Dracæna, var., doz. ...	12	0	30	0	Lycopodiums, doz. ...	4	0	6	0
Dracæna viridis, doz. ...	9	0	18	0	Marguerite Daisy, doz. ...	6	0	9	0
Erica hyemalis, per doz ...	9	0	15	0	Myrtles, doz. ...	6	0	9	0
„ gracilis, per doz. ...	6	0	9	0	Palms, in var., each...	1	0	15	0
„ various, per doz. ...	8	0	12	0	„ specimens ...	21	0	63	0
Euonymus, var., doz. ...	6	0	18	0	Pelargonium*, scarlet, doz.	4	0	6	0
Evergreens, var., doz. ...	4	0	18	0	Tulips, various, doz. bulbs	0	9	1	6

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2 0	to 4 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Arum Lilies, 12 blooms ...	2 0	3 0	Mimosa or Acacia, bunch		
Asparagus, Fern, bunch...	1 0	2 6	(French)	0 9	1 0
Azalea, dozen sprays ...	0 6	0 9	Narciss, white (French)		
Bouvardias, bunch	0 6	0 9	dozen bunches	2 6	5 0
Carnations, 12 blooms ...	1 0	3 0	Orchids, var., doz. blooms	1 6	12 0
Chrysanthemums, 12 bnchs.	8 0	15 0	Pelargonium, doz. bnchs.	6 0	9 0
Daffodils, doz. bunches ...	5 0	9 0	Roses (indoor), doz....	0 6	1 0
Eucharis, doz.	3 0	5 0	„ Tea, white, dozen ...	1 0	2 0
Euphorbia jacquiniæflora,			„ Yellow, doz. (Perles)	1 6	4 0
per bunch	1 0	2 0	„ Safrano (English doz.	1 0	2 0
Gardenias, doz.... ..	5 0	8 0	„ „ (French) per doz.	1 0	1 6
Geranium, scarlet, dozen			„ „ per 100...	5 0	7 0
bunches	6 0	9 0	„ „ Pink, dozen	2 0	3 0
Hyacinths (Roman) dozen			Smilax, bunch	1 6	2 0
bunches... ..	4 0	8 0	Snowdrops, 12 bunches ...	0 9	1 6
Lilac (French), bunch ...	3 0	4 0	Tuberose, 12 blooms ...	0 6	0 9
Lilium longiflorum, 12 blms	4 0	6 0	Tulips, dozen blooms ...	0 6	1 6
Lily of the Valley, 12 sprays	0 9	1 6	Violets, dozen bunches ...	0 9	2 0
Maidenhair Fern, dozen			„ Parme (French),		
bunches... ..	4 0	8 0	bunch	3 0	4 0
Marguerites, doz. bunches	2 0	3 0			



AN AMERICAN PEST.

WE are all so apt to consider that our own afflictions and troubles are really the worst in the world. Other folk may be similarly afflicted, but in their case we find mitigating circumstances—in ourselves never. If disaster comes it is gigantic—if a blow falls, it is on a raw place.

But after all we may sometimes make a slight mistake; we forget that we are looking at our own and our neighbour's troubles from different standpoints—we see our own through a microscope, magnified in every detail; our friend's troubles through the reversed end of a telescope. In this country we are not often subject to insect invasion; insect life does not assume such vast proportions here as in some countries. True, some years ago Great Britain suffered much from the diamond-backed moth, but if we mistake not, the visitation was only for two seasons, and the ravages were confined to the Turnip crop. This was quite serious enough in all conscience, but still the pest was, as it were, localised. We need not specify certain pests that attack garden produce, that is not our subject to-day, or we might refer to the Onion maggot and the Currant moth, with a host of others.

We have been much interested in an article appearing in a recent number of "Harper's Magazine" headed, "A State in Arms Against a Caterpillar." This caterpillar is known in England, being found plentifully in fenny districts, but is not generally common. We have a specimen of the moth caught in or about the New Forest, Hampshire. The name is *Hypogymna dispar* (the gipsy moth), so called probably from the brown tanned colour of the male, which is always much deeper toned and smaller than the female. On the Continent it is often a real pest, and will strip the whole of the trees in given districts. The caterpillar appears from June to August, then changing into a moth, after a short and busy life of egg-laying, dies.

This pestiferous insect is not indigenous to America. It was brought over to Medford, a suburb of Boston, Massachusetts, about twenty-six years ago by a Frenchman. His idea was to cross this insect with the silkworm, and so produce a hardier type of silk spinner. Unfortunately, however, these creatures got their liberty, and used it, and in 1892 had spread over 220 square miles of territory—a territory bounded by the ocean on the east, Boston on the south, Waltham and Lexington west, and Beverley north. In 1889 they came in such remorseless hordes as to sweep fields, gardens, orchards and trees bare; they not only ate every green thing, but the country literally stank of them, as Egypt did of old in the days of the dead frogs.

Private enterprise did what it could, but when one considers that each gipsy egg cluster contains on an average 600 eggs the work was herculean. A calculation has been made that a pair of gipsy moths could produce sufficient caterpillars in eight years to destroy the entire vegetation of the United States. Not only could they devour all vegetation, but they would pollute all water supplies by their dying hosts. Then the State took the matter in hand, and treated the caterpillar to arsenic spray. To this the tent caterpillar and canker-worm succumb, but not so this new pest. Indeed, it seemed an open question whether the arsenic did not act as a tonic rather than a poison.

Next a plan was tried for catching the male moth. This, in a measure, reduced the fertility of the eggs; but it was only like a child's dam stopping up the course of a stream. Then experiments were tried by extremes of cold and heat, but neither materially affected the creature. A well grown caterpillar will live four days in water, and will subsist nine days without food. The eggs, too, covered as they are with down, seem capable of resisting rain, frost, or fire.

The Board of Agriculture tried the effect of intense flame of vapourised petroleum waste applied by a hose. This had the desired effect, and in the heat the eggs exploded. But eggs are not easily found, or rather they are so carefully hidden in heaps of waste, hollow trees, interstices of stone walls, the under side of branches, the highest twigs that reach the sky, the eaves of houses, the crannies of buildings, that it is well-nigh impossible to reach them all.

Birds have not been found of any material use in diminishing this scourge. Most of the birds will eat a few of the caterpillars or in pupa form, but they do not take to this food with any sort of relish. There is a talk of importing the ring-necked pheasant, as it is believed she feeds her young on this pupæ. One of the schemes tried is

certainly ingenious in its nature. In an infested district it is not an uncommon sight to see whole plantations of trees adorned with a strip of bagging, about 5 feet from the ground. The caterpillar likes the dark, and gladly finds shelter under these strips as the sun touches the tops of the trees. These traps are carefully and systematically searched, and all life killed. In searching suspected ground for eggs sometimes three, or even four, searchers follow one another, so thoroughly is the work done.

Then, again, a system of covering over with pieces of tin and caulking of coal tar is resorted to as a means by which to prevent the depositing of eggs in cavities or wounds in trees. This method also must do something towards the preservation of the wood. Then, too, if trees are badly infested they are burned, as the surest means of stopping the plague.

By all these means carefully carried out the plague has been confined to one district. Were it to cross the boundaries there is no knowing where it might be stayed. The caterpillar is a fatal enemy to the staple crop of the Southern States (we mean cotton), but so far it appears to have a dislike to tobacco.

In Eastern Europe it has been known to defoliate immense regions in a short space, and in Russia only lately its ravages have been most extensive. Unlike other insect pests (save, of course, the locust) it takes every green thing, and leaves the land bare as a desert.

The Board of Agriculture in Massachusetts does not intend to curtail its energies till it has extirpated the caterpillar, and destroyed the last egg. If our Board of Agriculture took similar steps with regard to sheep scab, swine fever, and anthrax, we as a nation would rise up and call the Chairman "blessed."

WORK ON THE HOME FARM.

Though we have had at least two frosty nights during the last week, and one day a slight covering of snow, the weather could hardly be called wintry. But although the general appearances are those of spring, we must remember that February does not belong to the spring quarter, and not shout before we are out of the wood.

The great feature of the present season is its dryness, and the rainfall is still quite insignificant, so that even without a powerful sun and consequent evaporation, we find the land dry enough to work with drag and harrow; so we keep at it, and if nothing hinders there is no reason why the land should not be ready for Turnips this month, if it were Turnip time. We said "if nothing hinders." Alas! The influenza fiend is on the move, and as we write nearly half our hands are down with it. The horses had a threatening but a slight attack, but it soon yielded to remedies. For influenza in horses the best thing is to rest them, keeping the animals warm, rub their throats well with Elisha's embrocation, and give them as much boiled linseed as they can be induced to take.

Though we are getting very forward with the horse work, illness amongst the men, and a scarcity of skilled labour generally, tends rather to accumulate arrears in the manual labour department. Several items of hedging and ditching are still on hand, and though we are prepared to pay a good price to a good workman, they are likely to remain so. When will the youth of the village see that it is to their great interest to become skilled workmen? We have plenty of men (so called), but they are nearly all the wrong sort.

We have not yet got the Wheat harrowed, but hope soon to do so. The early sown Wheat is now very big for the time of year, and the later sown crops look quite well enough.

Turnips are still very plentiful, but those unpied are growing and losing quality very rapidly, perhaps they would pay for storing now. Grass is now much more like May than February, will it be like February in May?

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1898. February.		Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture		
			Dry.	Wet.			Max.*	Min.	In Sun		On Grass
		inches	deg.	deg.		deg.	deg.	deg.	deg.	inches.	
Sunday	6	29.738	43.1	42.8	S. W.	39.6	46.9	32.8	60.3	27.9	0.058
Monday	7	29.790	37.4	35.2	W.	39.6	46.0	33.7	79.2	29.1	—
Tuesday	8	30.061	38.2	37.0	W.	38.9	49.3	32.6	76.4	27.6	0.004
Wednesday	9	30.248	35.6	34.6	W.	38.7	46.3	31.1	60.0	26.6	—
Thursday	10	30.315	44.8	42.8	S. W.	39.4	49.4	35.1	58.9	31.4	—
Friday	11	30.333	45.4	42.9	S.	40.9	49.1	44.1	54.7	40.9	0.016
Saturday	12	30.356	45.1	44.9	W.	41.9	52.2	44.2	60.3	40.7	0.096
		30.120	41.3	40.0		39.9	48.5	36.2	64.3	32.0	0.174

6th.—Steady rain from 4.30 A.M. to 9 A.M., and showers after; a little sun in afternoon; clear night.

7th.—Bright sun almost throughout, but occasional sprinkles of rain mixed with soft hail between noon and 1 P.M.

8th.—Sunny morning; shower at 3 P.M. and spots of rain at 4 P.M.; clear night.

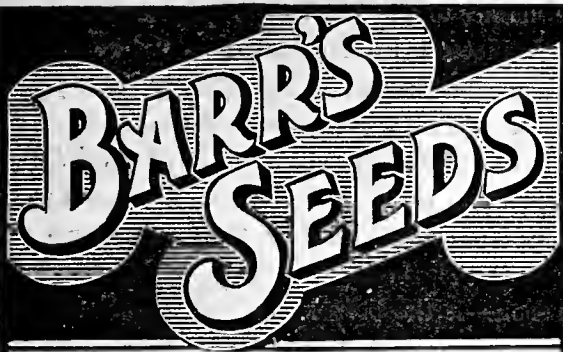
9th.—Hazy early; faint sunshine generally, bright at times in morning.

10th.—Fair with a little sunshine in morning.

11th.—Overcast almost throughout; a gleam of sun at sunset.

12th.—Dull and damp early; fair day.

Another week of high temperature and pressure with little rain.—G. J. SYMONS.



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4 " BROAD BEANS.	1 PACKET ENDIVE.
1 PINT DWARF FRENCH BEANS.	4 PACKETS LETTUCE.
1 PINT SCARLET RUNNERS.	1 PACKET LEEK.
1 PACKET BEET.	1 " MELON.
1 " BORECOLE.	4 OZ. " MUSTARD.
3 PACKETS BROCCOLI.	4 PACKETS ONION.
1 PACKET BRUSSELS SPROUTS.	1 OZ. PARSNIP.
3 PACKETS CABBAGE.	3½ OZ. RADISH.
1 PACKET COLEWORT.	1 PACKET SALSIFY.
1 " CABBAGE SAVOY.	1 " SCORZONERA.
2½ OZ. CARROT.	4 OZ. " SPINACH.
2 PACKETS CELERY.	3 OZ. TURNIP.
1 PACKET CAULIFLOWER.	1 PACKET TOMATO.
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1 PACKET CRESS, American or Winter.	1 PACKET THYME.
	1 " POT MARJORAM.
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COCKSCOMB, WILLIAMS' PRIZE	2/6
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" AUREA	1/-
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CINERARIA, WILLIAMS' SUPERB ..	1/6, 2/6, 3/6, 5/-
CYCLAMEN GIGANTEUM ALBUM ..	2/6, 3/6, 5/-
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" ROSEUM	2/6, 5/-
" RUBRUM	2/6, 3/6, 5/-
" FINEST MIXED	2/6, 5/-
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" " ERECT, MIXED	2/6
" " SPOTTED	2/6
" GOUVILLE STRAIN	2/6
PRIMULA, MAGNUM BONUM	3/6, 5/-
" SNOWBALL	3/6, 5/-
" AVALANCHE	2/6, 5/-
" ALBA MAGNIFICA	1/6, 2/6, 3/6, 5/-
" CHISWICK RED	1/6, 2/6, 3/6, 5/-
" METEOR	2/6, 3/6, 5/-
" SUPERB BLUE	2/6, 5/-
" " WHITE	1/6, 2/6, 3/6, 5/-
" " RED	1/6, 2/6, 3/6, 5/-
" " MIXED	1/6, 2/6, 3/6, 5/-

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Journal of Horticulture.

THURSDAY, FEBRUARY 24, 1898.

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CARNATIONS.

NAMES AND KINDS.

WHERE the cultivated Carnation originated, whence and when it was introduced into England, are interesting items in its history which unfortunately have never been elucidated. In the sixteenth century it seems already to have possessed a European reputation and to have been cultivated with great care. Previous to this, however, its history is practically a blank, and it comes suddenly within our ken an established garden flower, the finest varieties of which were cultivated in pots and protected during the winter months in frost-proof places. In England the earliest mention of the flower, a single kind, was made previous to 1420 by James I. of Scotland in the well-known "King's Quhair," the designations employed being respectively "Red jeraffleris" and "gerafloure." Some have supposed that Chaucer by "Clowe-gilofré" referred to a Carnation, but in both the instances it is mentioned by that poet it is in connection with other spices, such as nutmegs, liquorice, "Cetewale of Prys," an expensive kind of Spikenard, supposed to be a Valerian; ginger, grains of paradise and cinnamon. The passage describing these as growing together in the Garden of Myrthe is a poetic fiction, and we know it could not occur in fact.

The earliest names applied to the Carnation in England may therefore be safely concluded to be "jeraffleris" and "gerafloure," the former being used a century later in Gawain Douglas' Virgil's "Enid." Giroffier seems identical, and they appear to be contracted rather than corrupted forms of Caryophylleus. But although we conclude Chaucer's Clowe gilofré to be the same with the Cloue Gylofres seen by Sir John Maundeville growing in the Spice Islands, and therefore the Clove Spice, there is no reason to doubt that the designation in course of time came to be applied to a Carnation possessed of a pronounced scent of cloves.

The simple Gillyflower, which was spelled in a great variety of ways—Gyllofyr, Gillofer, Gillyvor, Gelloflore, Jillyflore, and Jellyflower being a few

examples—has been referred to a like origin. But we cannot forget that this word was an appellative which included several distinct flowers. Wallflowers, for instance, being called Wall-, Yellow-, and Winter-gillyflowers; the common Stock, White- and Stock-gillyflowers; *Hesperis matronalis*- Queen- and English-gillyflowers; and the white and red Campions, Wild Gillyflowers.

I have sometimes thought that "Gillyflower" may have, indeed originated as a name descriptive of those flowers which were worn on all occasions of festivity by young women, the common name of whom was "Gill," in the same way as the young men of the same class of society were known by the soubriquet of "Jack." Sir Walter Scott mentions as curious an old belief that Gillyflowers were planted around the gates of Paradise. In this connection the word may not refer to the flower at all, nor in the old ballad of "Clerk Saunders," where May Margaret is assured concerning certain women that

Their beds are made in the heavens high,
Down at the feet of our good Lord's knee.
Well set about wi' Gillyflowers,
I wot, good company for to see.

"July flowers" is a designation as applied to Carnations about which there is no difficulty. It was first used by William Lawson in "The COUNTRY Housewife's Garden" (1618). He says, "I call them so (July flowers) because they flower in July." "Sops-in-wine" is a somewhat older name than the last. It appears to have been used first of all as one of the many names borne by *Medicago sativa*. But we know from the Glosse to Spenser's "Shepherd's Kalender" that it was also "a flower much like to a Coronation, but differing in smell and quantity." In 1581, a year or so later than Spenser's Pastoral, it appears along with "Jillyfloures Coronations" and other flowers in Lillie's "Euphues and his England."

It has been thought that the name arose from the flowers having been employed as flavouring agents in wine and beer. Stevens, however, in a note to Shakespeare affirms that it "borrowed its name" from a long-forgotten custom that followed closely the conclusion of the marriage ceremony. This was the drinking by the bride and bridegroom from a bowl consecrated wine and wafers to which the very old name of "Sops-in-wine" was given. "Sops-in-wine" again as a flower was "worne of paramours." It seems to have been the same single form as that mentioned in "The King's Quhair," and to have had some meaning as a token between lovers. Not crowned till later, "King" James looked upon the flowers sent him by the Princess in that light, and it has no doubt some connection unreported to us with the "contracting cup" of the marriage ceremony.

This name appears to have been superseded by "Clove Gillyflower," the single variety. Both this and its double form continued for generations a favourite flower with Englishmen of all classes. The double form is portrayed in Hill's "Eden" (1757), and is a variety with few petals, rough, and with edges deeply serrated. Single and double are both mentioned in 1789 by Abercromby; but in 1820 Hogg declares them to be lost to gardens.

The single Clove Gillyflower was the type employed for the few economic purposes to which the Carnation was put. These included a syrup and a conserve of the flowers which Culpepper informs us were good "against the plague." Evelyn mentions the use of Clove Gillyflower in vinegar, and by the name of Clove Gillyflower water a cordial was prepared of brandy, water, and sugar, in which the flowers of the single red Clove had been steeped. This was in much repute in the eighteenth century, and "Ratafia d'Eillets" of the French, in which the petals of the single Grenadin Carnation are used, seems much like the above. In "Country Contentments" (1623) a curious method of pickling the petals in sugar and vinegar is described, and how the flowers were used with Purslane and pickled Cucumbers in forming flowers laid on flat dishes. We are informed that "These Sallets are both for shew and use, for they are more excellent for taste than to look on."

"Pink," though now employed to indicate only the flower which we know by that name, at one time was applied to several distinct

plants. It was also one of the names of the Carnation. An instance occurs in a children's coloured picture book (printed in "lively" colours) of the early years of the seventeenth century, in which by the name of "Jagged Pink," a crimson Carnation of a fair size and very double, is portrayed. This may have been the old "Clove Pink," which was red and quite distinct from the plant known by that name to-day. This, and the Old Man's Head Pink, were by some authorities considered true Carnations.

The last designation—Carnation—is the best known of all. Some little difference of opinion has existed as to the derivation and meaning of this word. Hogg, as an instance, having discovered that it meant from "Carnation" a "flesh coloured" flower; and it was "coronarium" from its having been used for chaplets and garlands for the head." The first derivation is unsupported by any evidence. "Coronaria," on the other hand, is a name beyond dispute. Dodœens declares that some have surnamed it "altilem coronarium," cultivated, or perhaps double coronaria, and the reason why it was so surnamed was because of its employment in garlands (coronis) and particularly "the double," which was used "almost beyond measure."

Carnation, as a name, was at first by no means popular, and perhaps it is only of late years it has become truly so. Anyhow, while Spenser and Lillie name the Carnation along with Gillyflowers—the last of which, in these instances, must refer to another plant—most writers leave the novel designation severely alone. Gerarde eschews it, though it is admitted his Herbal is largely a translation of Dodœen's "History of Plants"; while Lyte, on the other hand, has it in a translation of an earlier work of the same author. Bacon refers to Carnations as "gillifers of all kinds." Lawson seems to have been quite unacquainted with the word, though he grew nine or ten varieties of July flowers as large as Damask Roses. Neither Surfleet nor Markham name it, though Peacham, writing about the same time, mentions "Cloue gilliflowers and Carnations." In 1664, Evelyn distinguishes between Carnations and Gilliflowers; but Lawrence (1726) says Carnations are also called "Gillyflowers or July flowers." From about 1700 "Carnation" was used by florists, and Gillyflowers continued for long the everyday pretty name in common use.—R. P. BROTHERSTON.

(To be continued.)

SIMILARITY OF LIFE IN THE VEGETABLE AND ANIMAL KINGDOMS.

(Concluded from page 105.)

REPRODUCTION.

So anxious seems the beneficent mother—Nature—to preserve the varied forms of life that, at first sight, the power implanted in her subjects of the vegetable kingdom is so great, and the desire in the other kingdom so assertive, to "multiply and replenish" as would warrant the conclusion that it is considerably overdone. She has, too, her own methods of balancing matters in this marvellous fecundity of life, as may be noted by race living at the expense of race; in the multitudinous examples illustrating the interdependence of species chiefly, but not wholly, in the animal kingdom; and the highest stage of interdependence between the two great kingdoms. The wonderful methods employed as a substitute for that missing link, volition, in plant life whereby insects are the winged messengers of love in the silent kingdom with other ways and means to the end of fertilisation and reproduction, cannot but excite our wonder and admiration. So the great plant-world lures by a thousand charms of fragrance, of colour, of nutriment, or some essential to the economy of animal life, the subjects of it to supply the deficiency to their mutual advantage.

It is not felt to be necessary to enter at any length into details which are so easily to be acquired from botanical treatises. Like begets like, as a general rule, until man or other agent intervene. Certain safeguards, too, protect the rights of Nature from being unduly tampered with. In the matter of hybrids, whether the barrier on which is inscribed "Thus far shalt thou go and no farther," wisely intervenes where confusion might commence, and the ending be in dire disaster. Traversing the whole range of life in both kingdoms pretty much the same means to the same end of perpetuation of species are frequently in evidence. Dr. Lindley speaks of trees arriving at the age of puberty, and says respecting it, "This alteration of habit . . . by the influence of which the sap or blood of the plant is to be partially directed from its former courses into channels in which its force is to be applied to the production of new individuals rather

than to the extension of itself." A very common simile recognised by earlier students of nature was that pertaining to seeds of plants and eggs of animals, including the reptilia and fishes, as well as of birds. One great difference undoubtedly obtains in the generally accepted dictum, that the seed can only be formed subsequently to the action of fertilisation, whereas egg production is not dependent upon that.

One can hardly touch upon such phases of our subject without being tempted to inquire further into matters so fascinating, yet a little aside, perhaps, of our present purpose. In allusion, however, to that interdependence previously noticed, we have, I think, in parasitic life another phase of similarity not to be overlooked. Apart from all considerations of insect life infesting plants, partly or wholly dependent upon them at some stage of their existence, there are those parasitic vegetables, including fungoid organisms, which to their hosts are the detrimentals of society. Here we have great robbers and little rogues of more insidious habits, which in their independence and manners of living are very similar to that unenviable state of life among certain of the insectivora revealed by the magnifying lens, and described as follows:—

"Big fleas have little fleas upon their backs to bite 'em,
And little fleas have lesser fleas, and so *ad infinitum*."

But it is scarcely necessary to go farther, possible though it is to bring forward a vast mass of evidence in support of that similarity existing between the two great kingdoms of life.

We are, as I said, apt to place in juxtaposition the highest forms of animal life, and see nothing but a great barrier, so dismissing the matter as of no utility to practical workers in the great field of Nature. Whereas, the farther we look, and the more profoundly we investigate, that barrier dwindles away into dim prospective, to the very germ of life itself; to where, indeed, arises the great barrier, the veil of creation, which mortal vision may not penetrate. 'Tis given us, however,

"To trace in Nature's most minute design,
The signature and stamp of power divine."

And we can hardly do so, I think, without mutual advantage to ourselves and the labour we love. Extended as our powers may be, and great as is the power bestowed "to have dominion," the greatest wielders of it in the field of science have utterly failed when attempting to measure the infinite by the finite of human understanding. They have told us that life cannot exist upon certain planets because certain conditions, regarded as essential to it, are absent; just as a superficial reasoning says there can be no relationship between the two kingdoms of life, whose very existence is interdependent. From the former notion we can hardly hope to escape, being of the earth earthy; but as students of Nature it is given us to take occasion by the hand, and make the bounds of freedom wider yet.

In conclusion, one fact remains to be faced in the pre-supposed question I have to answer—viz., What practical ends are served by bringing this subject before men who are so essentially practical? Emerson speaks so pointedly in answer to this that he is all-sufficient to act as deputy, expressing clearly what is felt to be the truth of the whole matter. He says, "All our science lacks a human side. . . . Buds and stamens, and spores, on which we lavish so many years, are not finalities; and man, when his powers unfold in order, will take Nature along with him, and emit light into all her recesses." Then, and then only, I venture to add, shall we attain to the highest results; then will the triumph of mind over matter be complete.—INVICTA.

THE BLACK CURRANT.

(Concluded from page 96.)

ONE point in connection with the variations in the Black Currant is worth attention, and that is in regard to raising them from seed. By careful and continued selection a greatly improved race of varieties could be obtained; and some, perhaps, that would be less liable to the attacks of the most troublesome pest—the bud-mite. The seedlings are exceptionally vigorous, in three years are large enough for transplanting, and will produce sufficient fruit to determine their merits. The seeds can be raised in pots in a cool house or frame, or they may be sown out of doors, but the former method is preferable.

A few words will suffice respecting cultivation, for almost any fertile soil that is not too dry suits the Black Currant, and they will thrive in much wetter situations than Gooseberries or Red Currants. To insure the best results they require liberal treatment as regards manures, and I have found nothing better than a dressing of well decomposed farmyard manure, and a sprinkling of superphosphate of lime and kainit, the first at the rate of 20 tons to the acre, the chemical manures at 3 cwt. and 2 cwt. respectively in the order named. It is quite as essential to avoid digging close to Black Currants as it is with Raspberries, for the roots extend a considerable distance and often near the surface. I have found vigorous roots two years after

planting radiating 3 feet from the stem, thus covering an area 6 feet in diameter for each bush. The addition of the chemical manures I have found to have a beneficial effect even in smaller quantities than those named, and applied in alternate years.

The great recommendation of the Black Currant has been its freedom from diseases and insect enemies, but its value has been lessened in these respects greatly within recent years. First, there is the tendency to the loss of large branches quite suddenly, sometimes nearly half a bush dying in this way; and this has been generally attributed to impoverishment of the soil, to which cause it is, perhaps, partly due. But there is another cause, and that is traceable to the pruning, for close examination has shown in almost every case which has come under my observation that the dead portion of the stem was in direct communication with a cut branch which had died back, and either the decay has extended from this into one of the main stems or a fungus has helped in the mischief. It often happens that the whole bush has made vigorous growth, and there is nothing to indicate there is anything wrong until the season of growth arrives in the spring, when the buds half expand and wither. As far as I have observed, the evil is avoided to some extent by cutting old branches clean out, as the older wood does not heal readily, and in other cases cutting close to a good bud on younger wood when the bush is being formed.

But there is a greater evil attending the Black Currant than that described, and it is one of which the serious nature has not been generally recognised, though the mischief is extending so rapidly that unless some efficient means of checking it is promptly discovered it will destroy the whole trade in this fruit. I allude to the Currant bud mite, which causes the swollen buds, too readily detected in hundreds of plantations at the present time, and which has been repeatedly described and illustrated in periodicals and books, but without any preventives or effectual remedies being recorded.

The first notice of this pest known to me occurs in the *Journal of Horticulture* correspondence pages in January, 1867, where inquiries are answered referring to its appearing in the neighbourhood of Glasgow and other parts of Scotland. Two years after this the Rev. J. M. Berkeley had specimens sent to him, and the injury was determined to be due to the presence of a mite, a species of *Phytoptus*, afterwards described by Professor Westwood as *Phytoptus ribis*. But there seems to be some variability in these minute pests which has occasioned much discussion as to their true nature. The practical aspect of the matter is that these pests attack the young buds in their earliest stages, certainly the effects are visible in October and November, they feed on the inner scales of the bud, set up an abnormal condition resulting in a swelling of the tissue until a large globular bud is formed, and in the spring these do not open but wither. At first a few affected buds only may be observed, and this is the time to adopt remedial measures, the first means being the careful removal of every swollen bud, placing them in some vessel for burning. Then if the bushes are thoroughly and repeatedly dressed with some approved and penetrating insecticide the damage may be checked for a time. But I have never yet seen a plantation completely cleared by any other method than cutting the bushes down close to the ground, dressing the stumps, and watering the soil with a liquid insecticide, or giving a dressing of lime, afterwards stimulating the plants to vigorous growth by heavy dressings of manure.

When once the mite has a firm hold, the total destruction of the bushes, and the occupation of the ground with another crop for a year or two, seems to be the only means of dealing with it. I have seen bushes with from 100 to 300 diseased buds, and the enormous number of mites present can be imagined when it is remembered that they measure about the 200th part of an inch in length, and every bud contains swarms of them. As to the time when the bushes should be dealt with, I would suggest spraying before the buds expand and immediately after the fruit is gathered, for it appears that the increase of the pest takes place from February onwards through the summer months. Miss Ormerod gives, in her "Manual of Injurious Insects," full details of what has been tried, but the Board of Agriculture has also issued a leaflet which can be had free on application to the Secretary, 4, Whitehall Place, London.

The various mixtures that have been tried, and recommended for application in spring and late summer, are the following:—4 gallons of petroleum and 6 lbs. softsoap to 150 gallons of water; 2 gallons carbolic acid and 6 lbs. softsoap to 100 gallons of water; 2 lbs. sulphur and 3 lbs. lime boiled in 3 gallons of water, and the plants syringed with a dilution at the rate of 3 pints to a large pail of water; and 4 ozs. sulphuret of lime and 2 ozs. softsoap to a gallon of hot water. The effects are varied and uncertain. The difficulty, obviously, is to find something that will penetrate into the buds and destroy the mite without injuring the bush, and the mixtures or compounds of sulphur seem to afford the best chance of doing this, especially if they can be applied in a form that will adhere to the buds. The matter is, however, so important that some organised system of dealing with the pest should be decided upon generally.—FRUIT GROWER.

EARLY CABBAGES.

CROPS grow apace during the continuance of the mild weather for which this winter has been remarkable. On all sides we see evidences of the forward state of vegetation; even the Thorn hedges are bursting into leaf, and gardening operations are being pushed on with all possible speed. I do not remember having previously seen autumn-planted Cabbage in so forward a state as they are now; in fact I saw an amateur who possesses a warm sheltered garden cutting nice heads of Ellam's Early a fortnight ago. Such heads are, no doubt, useful even at this season, but they do not possess the delicate flavour and crispness for which young Cabbage are noted during April and May, neither is it desirable to have them ready for cutting thus early, because there are plenty of seasonable Kales and other Winter Greens ready for use, and as the frosts have been so slight Broccoli have for once given an almost continuous supply where successional varieties have been planted.

Most good cultivators are too cautious to place "all their eggs in one basket," and they act upon the same principle in regard to Cabbages, by raising early and late plants in late summer or autumn. The latest will this year prove invaluable, as they will afford good heads for cutting at a seasonable time when premature crops are over. If such young plants are still in temporary beds where they were pricked out in the autumn no time should be lost in planting them in their permanent quarters. Rich ground should be selected for them, as it does not pay to grow Cabbages in poor soil, for the progress made under such conditions is too slow, and the heads lack the essential tenderness and fine colour when ready to cut. Heavy land which was dug and thoroughly manured in November or December will during a fine day be in the right condition to be worked with a Canterbury hoe, which is an excellent implement for reducing lumps to a finer state and for stirring the whole without reducing the soil to such a fine condition as to cause it to become hard, close, and impervious to air. There is no necessity to draw drills for planting in when the soil is stiff, indeed it would often be a troublesome business to do so in early spring, and there would be no compensating results.

For early varieties, if the rows are arranged 18 inches apart, and the plants set 15 inches asunder in the rows, the space allowed will be found ample, as we possess several good types of Cabbages whose leaves do not spread greatly, and the hearts are conical rather than round. When the planting is done on light soils, the digging may with advantage be left till planting time, when, of course, a heavy coating of manure ought to be given. I find light and old garden soils are often teeming with grubs, which make short work of young plants. The remedy at the time is, of course, to dig up the stumps left, catch and kill the depredator, and dust freely with slaked lime, but steps ought to have been previously taken to destroy such pests by spreading gas lime upon the land in the autumn, or at least three weeks before it is dug, 30 lbs to a rod being a suitable quantity to apply in the latter case, but in autumn 50 lbs. may be safely used.

The usual garden plan of lifting with balls of earth and planting carefully is one that should be always persevered in, as plants so treated grow away without receiving a perceptible check, and in the case of early crops a gain of time means a proportionate gain of money in the shape of better prices. It is encouraging to find that cottagers and allotment holders are in many instances now turning their attention to this important detail, yet there are still far too many who pull up their plants ruthlessly, and then thrust them far too deeply into the soil, the result being slow progress in many cases, decay at the roots, or clubbing in others.

As all autumn-raised plants are likely to this year be earlier than usual, a sowing should now be made to afford good heads in June and July, a time when Cabbages are by no means to be despised, especially when large demands for the servants' hall have to be satisfied. Good varieties to sow are Dickson's First and Best, Sutton's Earliest, Ellam's Early, and Veitch's Earliest of All. I have grown these sorts repeatedly, and although Ellam's Early is the best for autumn sowing, either of the other varieties named heart slightly quicker when sown in spring than the old standard variety. When growth is well advanced frequent stirring of the soil with a hoe should be the order of the day, especially during bright weather. At showery times a little nitrate of soda scattered along the rows will give great impetus to growth, and should the weather prove dry, manure water applied copiously will quickly show its effects in the shape of glossy vigorous leaves. Under all these favourable conditions the plants seem to grow by leaps and bounds, and the cultivator feels he is getting due return for his labour, for be it noted that the reward of the gardener is not received in this world's goods alone, but also in the instinctive sense of satisfaction which is awakened in the human breast when vegetation is developing luxurious growth. Even the Cabbage grower has his happy moments; who has not?—H. D.



LÆLIA ANCEPS WADDONENSIS.

THE dull period of the year at the Drill Hall has, this season, been wonderfully brightened by the many superb Lælias that have been exhibited by different growers at the several meetings. More than one of the varieties have received recognition at the hands of the Orchid Committee, and in every case the honour has been thoroughly deserved. The latest to receive a first class certificate was Lælia anceps waddonensis, staged by Phillip Crowley, Esq., Waddon House, Croydon, the Chairman of the Fruit and Vegetable Committee of the R.H.S. A glance at the woodcut (fig. 24) will suffice to show the splendid shape of this charming variety of anceps, which, save for a blotch of yellow and purplish veins in the throat, is pure white. From tip to tip of the petals the measurement was $4\frac{1}{2}$ inches, with a depth of half an inch less. It is a lovely variety, and, needless to say, was much admired.

ORCHID APPLIANCES.

WE have received particulars of several of the West's patent specialities for orchidists. The baskets are now no novelty, and have found favour with many well-known Orchid experts, as quoted in the circular. Their chief merit appears to us to be in the level top and fixed bottom, the former rendering the plant more easily fixed in position, the latter preventing the basket from twisting out of shape and so snapping the roots. They are offered in various shapes and sizes, some made to hang against a wall, others in the shape of a pot, and a very useful contrivance for dwarf-growing Orchids of the Sophronitis class or small Lælias will be found in the patent raft. There can be no risk in purchasing these patent baskets, as they are sold at as low a price as the ordinary style. By the courtesy of the makers we are enabled to give illustrations of the West's patent pot rim (see figs. 27 and 28, page 177). This serves a double purpose. The rim may be placed in any class of pot, and not being bevelled so sharply as the pots, makes a chamber all round the inside to catch any surplus water, this being carried through the holes to the compost. The holes being made in the form of an inverted triangle the water drains away very slowly, so whatever part of the chamber it falls into it is bound to find its way to most, if not all, of the holes, and therefrom to various parts of the compost. It may also be used to stand Orchid pots on, and is a great deal better than the usual inverted pot, as air reaches the bottom of the pot through the pierced sides. Full directions for its use in one or two other ways are given by the maker.

The West's patent ivory labels are excellent in every way—neat, inexpensive, and quite harmless to the plants, which many are not. The ordinary wood label is a great nuisance in Orchid houses, always rotting, and when made of some kind of wood always covered with a troublesome fungus. They are apt to damage the roots when placed in the pots, and are quite unsuitable for baskets; but the small copper wire shank to these is harmless and takes up no room, while it may easily be attached to pots, baskets, or even blocks.

THE QUEST FOR RARE ORCHIDS.

ASHWORTH V. WELLS. — This was the defendant's appeal before Lords Justices A. L. Smith, Chitty, and Collins, by which he sought to prevent a new trial of the action, as ordered by a Divisional Court after judgment had been entered for him in the Manchester County Court.

The action by which plaintiff sought to recover £50, was a very interesting one, relating to the culture of Orchids. Mr. Wells, the defendant, was the owner of an extremely valuable collection of Orchids, which in 1895 he offered for sale by auction in London. The plaintiff, Mr. Ashworth, who was also a well known Orchid grower, possessing a collection valued at between £15,000 and £20,000, attended the sale and purchased one of the lots, which was described in the catalogue as a "Cattleya Aclandiae alba, seven bulbs, three leaves—the only known plant." A white variety of Cattleya Aclandiae is perfectly unique—no lover of Orchids has ever been fortunate enough to find one—and this specimen was knocked down to plaintiff for 20 guineas. He placed it among his other Orchids and carefully nurtured it for two years, and when at the end of that period it blossomed, its flower was not white, but purple.

Having thus demonstrated itself not to have been an alba, but a rather common Cattleya Aclandiae, the value of which would not be more than 10s., the plaintiff sought to recover his 20 guineas, and also special damages for false warranty; and he limited his claim to £50, so that the County Court might have jurisdiction. It was not disputed that the description in the catalogue amounted to a warranty of

the Orchid as being an "alba," but a question argued was whether the disappointed plaintiff could be entitled to special damages on account of that warranty having proved false, or should merely receive back his 20 guineas, plus a small sum for his loss of time and for trouble during the two years of useless cultivation. The County Court Judge took the latter view, and held that plaintiff was entitled to 20 guineas, and £2 compensation; and as defendant had paid those sums into Court, judgment was for him.

On plaintiff appealing to a Divisional Court, their Lordships decided that the County Court Judge ought not to have restricted the damages to the sum actually paid, but ought to have taken into account the value which the Orchid would have reached on declaring itself a white *Cattleya Aelandiæ*. They sent the case back to have the damages assessed on the wider basis upon a re-trial. Against that order defendant appealed.

Having heard counsel on both sides, Lord Justice Smith, in the course of a long judgment, said the warranty was that this plant when it bloomed—if, in fact, it ever did bloom—would produce a white blossom. It was not a warranty that the plant would blossom, or even that it would live. The plaintiff bought it knowing that he would have to keep it a considerable time, in the ordinary course of events, before there would be a flower. It was not suggested that if the cultivation had been different the plant would have produced a white instead of a purple flower. The County Court Judge was wrong in deciding that Mr. Ashworth was only entitled to have his money back, and was not entitled to claim anything more by way of special damages. Evidence was given to show that a white *Cattleya Aelandiæ*, if one was ever found to exist, would be worth at least £50. The Court would order judgment to be entered for plaintiff for £50 with costs, and the defendant's appeal would be disallowed. Lord Justice Chitty and Lord Justice Collins substantially agreed. The appeal was accordingly dismissed.—("Daily Mail.")

DENDROBIUM BRYMERIANUM.

THIS is certainly one of the most interesting *Dendrobiums* in flower at this season, and one of the showiest if well grown and flowered. The stems are fusiform, upwards of 18 inches in length, and the flowers appear in small racemes of two or three, chiefly about the upper nodes. These are about 3 inches across, the sepals and petals of the usual form, as seen in the genus, but instead of the usual lip this segment is cut up into many fine filaments, forming a bright golden yellow fringe about an inch in depth. The species is strictly evergreen, but, as will be noted, requires a mode of treatment more resembling that of the deciduous section.

It is easily and freely propagated by taking off and either potting singly or massing the young growing shoots that usually appear in planting about the upper parts of the stems or pseudo-bulbs. The safest time to remove them is after they are finished growing, but before they commence a second season. If potted singly they must not be placed in pots larger than the 3-inch size, but several disposed around the edge of a 6-inch pot soon make a well-furnished plant. The compost for these and also for established specimens may consist of equal parts of peat fibre and sphagnum moss, but the root being larger and more fleshy than usual in the genus, plenty of large rough lumps of charcoal and crocks or potter's ballast may be mixed with it, and the drainage should come in for special care.

The best time to repot established specimens is soon after the flowers are past, but before the young basal shoots commence to root on their own account. Disturb the roots as little as possible, but take care that nothing in the way of decayed roots or sour potting material is left behind, as this makes the new compost close and heavy at the start, and is bad for the new roots. All such then must be cleared off, and the plants put into clean pots and new sweet material. Then when new roots are produced they push freely into this, and are able to carry plenty of sustenance to the forming bulbs. This is rather an important point in Orchid culture, or, rather, in the culture of this class of Orchid, for if disturbed at the wrong time the pseudo-bulbs are deprived of the nourishment that they require by cutting off the roots that should supply it.

The base of the stems should not be buried, but sit on the top of the compost, this being brought to a convex line from the rim of the pot. All ragged ends of peat and moss ought to be carefully tucked in with a blunt-pointed dibber, as if left hanging loose it is very difficult to say whether or not a plant is dry at the roots. And this, by the way, leads me to say that no Orchid should be repotted, if it can

possibly be avoided, when the pseudo-bulbs are in the least dry or shrivelled, as the further check given by disturbance of the roots is apt to be difficult to get over.

The plants being repotted should be returned at once to the growing quarters, and being a native of Burmah the East Indian house is the proper place for *D. Brymerianum*. Plenty of light must be allowed, and after the young shoots commence rooting on their own account they will bear almost full exposure to the sun. It would not do, of course, to let the sun shine on the plants in a dry house, but the damp atmosphere causes a film of moisture to settle on the glass at closing time, and though the sun may be full upon the plants no harm will be done to them—in fact, it causes just that quick buoyant atmosphere that is the life of all heat-loving Orchids, and *Dendrobiums* in particular.

D. Brymerianum requires a rather long season of growth, and this is often in full swing quite at the end of summer. The advantage, then, of letting the sun get at the forming growths is twofold. It helps them along at a good pace, and hardens them as they are produced, and here the chief difference between this and the deciduous

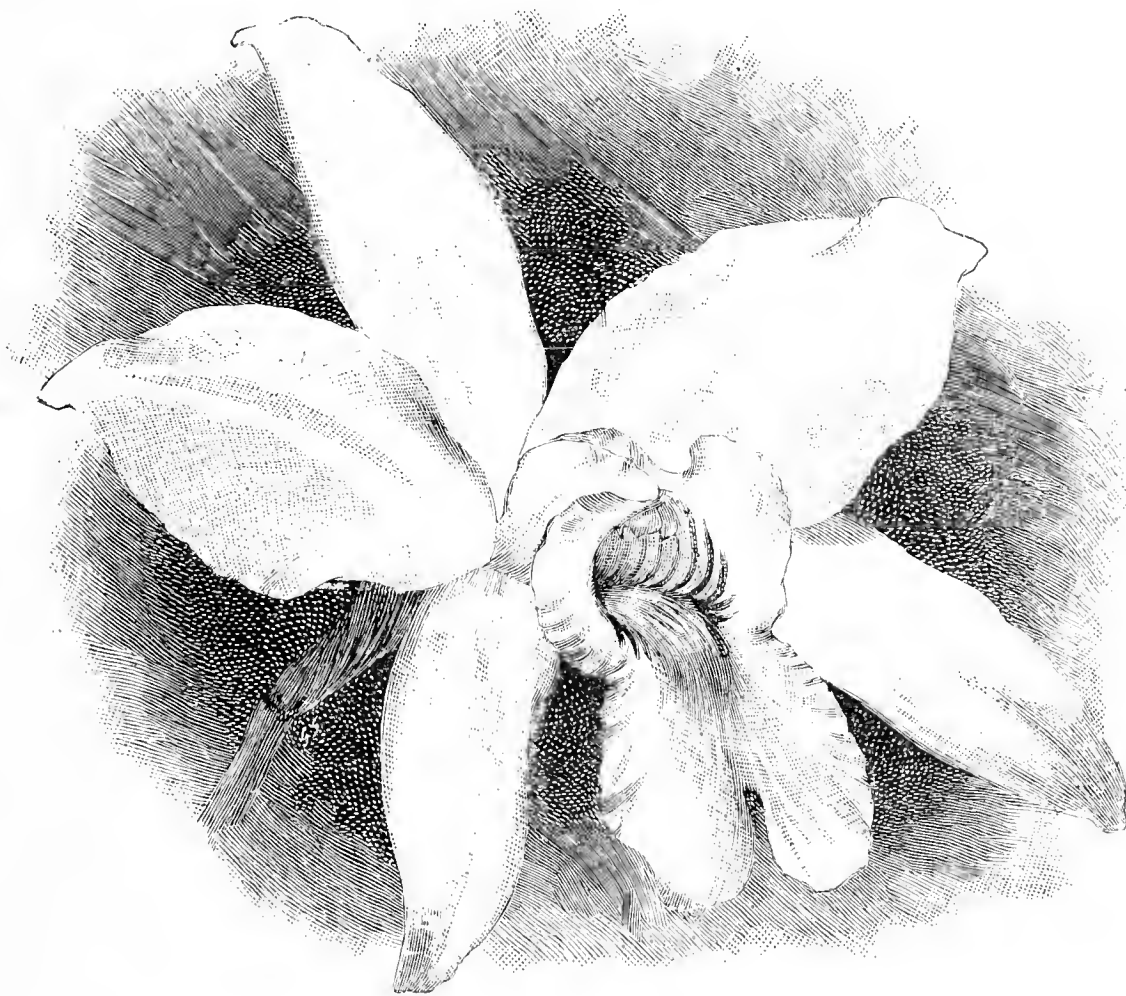


FIG. 24.—*LÆLIA ANCEPS WADDONENSIS*.

group is shown. The latter may be quickly grown, in most instances, and well ripened by exposure afterwards, but the longer season needed by *D. Brymerianum* renders this impossible, hence the need of ripening the growth as it is made.

The water supply must be free all through the growing season, and until the pseudo-bulbs are fully developed. From this time it may be gradually reduced, until by midwinter little more is needed by this kind than by the *D. Wardianum*, *D. crassinode*, and other divisions of the deciduous set. With regard to the small pieces referred to above, it is not advisable to dry these much during the first season or two, during which time flowers are not usually looked for. The more growth that can be got into these the better, so give them a good long season by starting early, and watering as freely as possible as long as there are any signs of growth.

The old plants will not, of course, be allowed to shrivel, but the less moisture they get, so that this is prevented, the better. Overhead moisture is permissible in the growing season after the new growths lose the characteristic cup shape until they are fully developed, but it is no advantage during dull or wet weather, or at any other period of the plant's growth, than that mentioned. Insects are not usually troublesome, and should they appear are easily kept in check by the usual means. As mentioned above, *D. Brymerianum* is a native of Burmah. It was introduced to this country by Messrs. Hugh Low & Co. in 1874, and was dedicated by Professor Reichenbach to Mr. W. Brymer, of Dorchester, in whose collection it first flowered, soon after its introduction.—H. R. R.

NOTES ON CARROTS.

CARROTS delight in deep, light, rather sandy soil. The ground must be free from anything which will obstruct the descent of roots, such as stones of large size, and clay. It should be free also from manure in the upper layers, but the subsoil may be enriched with some well decayed when breaking it up and finding it poor.

Trenching is the best method of preparing ground, but it is seldom, if ever, advisable to bring up the subsoil and bury the surface, hence some judgment should be used in the method of preparation. Trenching can be done without reversing the spits of soil. Deep cultivation in the way of double digging and trenching is valuable because it increases the depth to which the tap roots can penetrate downwards in a friable medium. When the tap root has a firm exclusive hold there is less probability of ramifications being originated, thus spoiling the form the main root ultimately assumes.

In wet, clayey, or otherwise unsuitable soils, Carrots have little chance of succeeding. In poor, hard soil they are not worth cultivation. On ground enriched and worked shallow, the crop is not a profitable one, though the short varieties may succeed, but even they prefer a deeper medium. The best situation is undoubtedly one which was well cultivated and enriched for a previous crop, such as Celery. Fork and break down the soil well, but keep the manure under. Choose dry and breezy weather for working the soil, and dry, calm weather for sowing. The seed is light, and may easily be blown away.

The earliest crops of Carrots are secured from frames. Early Short Horns are the most suitable. A layer of soil a foot in depth, but light in character and fertile, is placed upon a mild hotbed. The seed is sown in drills, just covering with soil, and protection given to the frames in bad weather. At other times abundance of light with a due supply of air on all favourable occasions must be afforded. Thin the plants to a proper distance. Immediately the roots are a fair size they may be drawn for use.

A sowing of the same or a similar variety may be made in March on a warm, sunny border for forming a succession. It is not necessary to sow the deeper rooting main crop varieties before April, when the ground is dry and becoming warm. The proper distances to form the drills may be 8 to 10 inches, or rather less in frames for the Short Horn variety, a foot for the intermediate forms, and 15 inches for the larger and longer roots. Sowing in drills is undoubtedly the best, because of the expeditious manner in which the processes of thinning the plants and weeding among them can be carried out.

Sow thinly in shallow drills, previously bringing the soil to a fine tilth by the use of the hoe and rake. When the seedlings have attained to a convenient size for handling pull out the most crowded, doing this gradually and at intervals until the plants have been separated to 4 inches apart for the small varieties, and 6 inches for the larger. After the final thinning hoeing between the rows may be frequently practised, not only to prevent the growth of weeds, but to promote rapid development. Only, however, stir the surface when it is dry.

In moist weather a few dustings of soot will be useful, and when hot, dry weather sets in a layer of short grass placed between the rows is beneficial as a mulch and preventive of attack from the Carrot fly.—E. D. S.

DIGGING AND TRENCHING.

I MAY be wrong, I lay no claim to extra acute observation or intuition, but judging from the letters which have appeared in our Journal following the, to my mind, most excellent note on "Winter versus Spring Digging" from the pen of our old friend and long time instructor of gardening in all its phases, Mr. David Thomson, I think—mind, I only think—that each writer has missed the point or crux of the question which our old practitioner brought before your readers on January 20th. To me, with perhaps some of the inner wisdom which comes to men who are getting old and greyheaded, and reading between the lines of his note, it appeared that this life-long, practical teacher, had not in his mind so much the carrying out of the mechanical practical act, as his desire to excite the brain thought which should govern the carrying of it out; that he was thinking more of the head to guide the hands than merely discussing that which the hands should do. He wanted the thought first, the act second; the thinking to be done and on sound lines from the first principles of Nature's laws, and then he knew that each thinker for himself would eventually do what was right, and he gave his practical lesson as to times of digging from his own experience as an illustration as to how he himself had found out the way which proved best for him, and the principles which had guided him to that course of practice. Simply and solely, according to my thinking, he wanted to get every man to THINK, and as an old man, he knew that, unfortunately with many of us, but especially with the younger men, the act is done first and the thinking about it afterwards.

S. R. Crockett, in "The Men of the Moss Hags," puts the

description of this habit very forcibly into the mouth of one of his characters. Jean Gordon, speaking to her relative William Gordon, says, "Ye Gordons are all alike. Ye aye fight and then reason; its first the blow and then the word." This, in substance, is what she says. I have not the book by me to quote verbally; but it struck me at the time of reading that it was too true of more besides the Gordon family, and I think it specially true as to the tone of the criticism on Mr. Thomson's note on digging. If I am wrong I shall be glad to be set right. I do not complain generally of that criticism; far from it. It has been well done from the standpoint of each writer, and not without humour at times, which is always a saving grace.

My contention is, and is only, that the writers missed the point; did not put themselves in the place of the man they criticised, and therefore drew wrong or false conclusions from Mr. Thomson's premisses. We shall all be the better for this friendly excursion into the garden with our spades, and shall profit by the discussion. Each writer is a practical man, knowing, so to say, which end of the spade goes into the ground, and in our future digging we shall think more and more of why we are doing our digging now rather than then—a then rather than now. As this is somewhat of a homily on thinking it may not be amiss to give from an unusual source for a gardening paper an extract from a sermon by the late Cardinal Newman on the growth of the British mind.

The Briton, he says, is in his own way the creature of circumstances; he is bent on action; but as to opinion he takes what comes, only he bargains not to be teased or troubled about it. He gets his opinions anyhow, some from the nursery, some at school, some from the world, and has a zeal for them, because they are his own. Other men, at least, exercise a judgment upon them and prove them by a rule. He does not care to do so, but he takes them as he finds them, whether they fit together or not, and makes light of the incongruity, and thinks it a proof of common sense, good sense, strong shrewd sense, to do so. All he cares for is that he should not be put to rights; of that he is jealous enough. He is satisfied to walk about, dressed just as he is. As opinions come, so they must stay with him, and, as he does not like trouble in his acquisition of them, so he resents criticism in his use.

Does the Cardinal's cap fit any of us? I feel rather like putting it on my own head, even though I am, of course, striving with all my powers to think it does not quite fit me. I am only sure of one thing, and that is, I am anxious to draw attention to the foundation truths in Mr. Thomson's note; those truths are, that, only by understanding the laws of Nature and following them out in our gardening shall we rise to be "workmen that need not be ashamed." "Age should speak, and multitude of years teach wisdom," and that Mr. Thomson is now doing, to our great benefit, for us week by week in the pages of "our Journal." He will have the teacher's reward, a good conscience.—AN OLD PROVINCIAL.

[Does the conscience of this old and able worker and penman disturb him because he has not endeavoured to teach oftener and more?]

ARTIFICIAL MANURE FOR FRUITS.

ALL fruit trees and bushes needing support will be benefited by the application of artificial manures. A healthy and fruitful tree yielding good crops of fruit should receive each season a complete dressing of phosphates, potash, and nitrogen, while one that is inclined to excessive growth and the production of wood rather than fruit should receive phosphates and potash only, the nitrogen being withheld until it is really needed. Raspberries and Black Currants depend on the free production of young growth for fruitfulness, and should receive a manure somewhat rich in nitrogen to promote free growth.

PHOSPHATES.—In stiff soils, peat or rich garden soils, apply in the autumn or early winter 4 ozs. of basic slag per square yard, followed by 2 ozs. of superphosphate in February or March. In light sandy soils substitute a cheap phosphatic guano or steamed bone flour for the basic slag, making the application at any time between November and February. In chalky soils apply 4 ozs. of superphosphate in early spring, and if the tree be cropping freely a second application of 2 ozs. per square yard should be made in June or early July.

POTASH.—In all soils which are not destitute of lime apply kainit 1 oz. per square yard in the autumn. It can often be mixed with basic slag and applied at the same time.

NITROGEN.—Young trees growing in rich soil rarely lack nitrogen, and care must be employed in applying nitrogenous manures lest coarse rank growth result. If the soil be not destitute of lime either nitrate of soda or sulphate of ammonia may be used with the same result. The quantity applied may vary from half to 1 oz. per square yard, according to the requirements of the case. Sulphate of ammonia can be applied in early spring in conjunction with superphosphate, guano, or steamed bone flour. Nitrate is best applied when the blossoms are just expanding, and if the trees are cropping heavily again at midsummer.

APPLICATION.—Do not exceed the quantities specified. Make the applications at the seasons stated, and aim at distributing the manure equally over the entire area of ground occupied by the roots of the trees.

It should be understood that in the case of strong, deep rooting trees which produce correspondingly strong fruitless growth, that no manures whatsoever can impart to them a productive habit. To mitigate the evil of grossness we must literally cut at the root of it.—EXPERIMENTALIST.



WEATHER IN LONDON.—Snow, hail, rain, frost, and sunshine have all visited us in the metropolis since our last issue went to press, and still winter is not yet. Thursday last was a fine day, but Friday, but all the above climatic conditions except frost, which came on Saturday morning. Traces of it were, however, early dispelled by the brilliant sunshine of the early morning and afternoon. The air was again frosty at night, but changed during the early hours of Sunday morning to rain, which was followed by wind, snow, rain, hail, and sunshine. On Monday, though storm was announced in the "dailies," we had calm; on Tuesday it was fine but cold, these conditions prevailing until the time of going to press on Wednesday.

WEATHER IN THE NORTH.—Since the 16th there has been a cessation of the high winds so prevalent, and the weather has been variable, with latterly another snap of winter. Saturday brought drizzly rain in the forenoon, and the evening was dull. On Sunday the ground had a good coating of snow, and 5° of frost were registered. Monday morning showed 8° of frost, which gave way in the afternoon, and 3° were recorded on Tuesday morning, which was bright and clear. A pretty severe snowstorm is reported from the northern counties. As an instance of the forward state of things I may mention that I cut the first Daffodil (*pallidus præcox*) in my garden on the 16th inst. Others are at least a month ahead of the usual stage.—B. D., *S. Perthshire*.

POT ROOT DAHLIAS.—It is not always easy or practicable to obtain Dahlia cuttings just at the right time for propagation, but pot roots may be procured along with the general seed order from most of the leading seedsmen, and these are of a suitable size for starting in small pots in a genial atmosphere between 50° and 60°. They may if necessary be placed in a size larger pot, keeping close to the glass in an airy greenhouse, and later in a frame, preparatory to planting out in late May.—S.

BOURNEMOUTH GARDENERS' IMPROVEMENT ASSOCIATION.—On the 15th inst., before a large attendance of members and friends, Mr. Arthur W. Sutton, F.L.S., delivered his lecture, entitled "Potatoes—Past, Present, and Future." In the absence through illness of the President, Mr. T. J. Hankinson, the chair was taken by Mr. A. Skinner, Highcliffe Castle Gardens, who briefly introduced the lecturer. A large number of limelight illustrations, including various species and varieties of *Solanum*, experiments in grafting and disease prevention carried out at Reading, and examples of some of the highest types of Potatoes in cultivation at the present time, gave additional interest to the lecture. Mr. Sutton was throughout listened to with much attention, and on concluding was, on the motion of Mr. J. Spong, seconded by Mr. J. B. Stevenson, accorded a very hearty vote of thanks. We are glad to observe from the balance-sheet supplied that the Association is in a sound financial state, but sorry to note the Committee's regret that "the meetings are not so well attended as they ought to be."

ROYAL METEOROLOGICAL SOCIETY.—The last monthly meeting of this Society was held on Wednesday evening, the 16th inst., F. Campbell Bayard, President, in the chair. Mr. E. Mawley, F.R.H.S., gave a report on the phenological observations for 1897, from which it appeared that there had been a marked absence of very exceptional weather during the past phenological year, the most noteworthy features affecting vegetation being the persistent rains in March and the three dry periods of May, July, and October. Until about the middle of May wild plants appeared in blossom in advance of their usual time, but throughout the rest of the flowering season they were all somewhat behind their average dates in coming into bloom. The heavy rainfall in the early spring favoured the hay, which proved the only really abundant farm crop of the year, but greatly impeded the sowing of spring corn. The cereals were, however, much benefited later on by the warm, dry, and brilliant weather of the summer. Taking the country as a whole Oats proved a good crop, Barley an average one, while the yield of Wheat was somewhat under average. There were also fair crops of roots and Potatoes. It was owing more to the dry spring and summer and the sunless autumn of the previous year than to the moderate frosts and cold winds of the spring of 1897 that the fruit crop was such a very light one. Apples, Pears, and Plums, and especially the latter, yielded badly, while the small fruits were in most districts only average crops.

UTILISING TREE PRUNINGS.—In removing branches from deciduous trees such as Lime, Sycamore, Oak, Beech and Birch, the most suitable portions may be prepared for Pea and Bean sticks. Shape and point them now while the wood is soft. They will then be ready for use, which will be an advantage at a busy time.—E. D. S.

A RIPE WILD STRAWBERRY.—It may be interesting to your readers to know that on February 14th I picked from the hedge bank a beautiful ripe Strawberry, the fruit well developed, fairly coloured, but lacking in flavour. Is not this evidence of the mild winter we are passing through? May I claim to be the first to have picked a ripe Strawberry in the open air in the year 1898?—S. PAUL, *Castleton, Cardiff*.

NARCISSUS MINIMUS.—The first flower opened here on February 17th, which is twenty-three days later than Mr. Arnott's at Dumfries, N.B. (page 146). Perhaps your correspondent's plants are growing in an exceptionally warm corner, or how are we to account for this great difference? Mine have only the shelter of a wall on the east side 12 feet high, and 10 feet from the plant in question, and they have been established there for several years. I do not find this *Narcissus* flower earlier when lifted and dried off, as your correspondent suggests. Unfortunately I have very few bulbs of it to experiment with, but half a dozen had to be removed last year. They were dried and replanted early; nevertheless they will be eight days later before they open the first flower, although practically side by side with the others.—W. H. DIVERS, *Belvoir Castle Gardens, Grantham*.

THE GREAT PARIS EXHIBITION OF 1900.—The first meeting of the Royal Commission for the Paris Exhibition of 1900 took place on Friday last at Marlborough House, his Royal Highness the Prince of Wales in the chair. In describing the scope and magnitude of the Exhibition, his Royal Highness said provision will be made for the display of every kind of art, industry, and manufacture. The guiding principle is that similar products, from whatever part of the world they may come, shall be shown side by side, and in this respect the Exhibition of 1900 will differ from its predecessors, in which the products of each country have usually been collected together. It was further stated that while a grant for the encouragement of and representation of national industries had been made by Germany of £250,000, and by the small State of Switzerland £66,000, the grant by the Treasury of the United Kingdom is only £75,000, and a considerable increase is hoped for. A number of sectional sub-committees were announced, and under the head of "Agriculture, Food, Horticulture, Forestry, Fisheries, and Wild Crops" we find the members comprise the Earl of Crewe, Duke of Fife, Earl of Dudley, Earl of Jersey, Earl Spencer (Chairman), General Sir Redvers Buller, V.C.; Mr. Horace Plunkett, M.P.; Sir Edward Grey, M.P.; Sir Trevor Lawrence, Sir George Russell, Sir Jacob Wilson, Mr. Thistleton Dyer, Mr. Laurence Grattan, and Mr. Paul J. Madden.

THE SHREWSBURY PRIZE SCHEDULE.—Between the familiar buff covers of the schedule for the present year we find that the sum of £950, apart from medals, is offered for prizes. The great summer show will be held on August 17th and 18th, entries closing on August 10th. The schedule comprises 196 classes, and apparently some 800 prizes. Provision seems to be made for practically everything ornamental and useful that is produced in gardens. Besides allocations of £52 in each of the two large group classes, and £45 in the specimen class (thirty plants), a silver cup, value £25 or cash, is provided for a new class of twenty stove and greenhouse plants, not less than twelve to be in bloom. A change is made in the "floral designs" class, which now reads "six bouquets and six baskets of cut flowers, plants, Ferns, and cut foliage allowed for decoration; space 10 feet by 5 feet. Prizes £15, £12 10s., and £10; a silver cup, given by the President, T. Kynnersley, Esq., with the first prize." Combinations of great beauty may be anticipated. The "decorative dessert table" class, of fruit, plants, and flowers, which was one of the great successes of last year, is to be repeated; and the sum of £45 distributed *pro rata* with the points awarded, as five prizes, the number of points to be placed on the exhibits. On the same principle £25 is offered for distribution in five prizes in the re-introduced "garden produce" class of fruits, plants, vegetables, and flowers (according to the stipulations), arranged in a space of 8 feet x 4 feet by 4 feet 6 inches of tabling. The competitions in this class were too crowded two years ago—not in themselves so much, as in being crushed against each other, which detracted from their individuality. They should, like groups of plants, have clear spaces between them. Valuable prizes are offered by Messrs. Carter, Sutton, Webb, Sydenham, Eckford, and others. The show in its entirety is bound to be of great diversity and magnitude.

— SIR JOSEPH PAXTON.—I should be glad to know of any work giving a biographical sketch of Sir Joseph Paxton.—H. N.

— NITROGEN IN THE SOIL.—The season of the year when the soil contains least nitrogen in a form available for plants is spring. Hence dressings of nitrate of soda applied to Cabbage or Strawberries are more serviceable at that period than later in the year.—E.

— CORRECTING ACIDITY IN GARDEN SOIL.—Lime is very useful to apply to soils that have become somewhat sour and acid owing to the gradual accumulation of humic matter. It combines with the acids in the soil and releases plant food. Basic slag, a by-product in the manufacture of steel, acts similarly on soils containing much humic or organic matter.—S.

— TWO GOOD VARIETIES OF PEAS.—As an early variety of Pea English Wonder is better than American Wonder. Both are wrinkled varieties. The first named grows from 1 foot to 16 inches high, and crops well. As a second early blue Pea, Harrison's Glory is most prolific, grows to the height of 2½ feet, and bears handsome pods. Rich ground and good cultivation is essential.—E. S.

— THE COST OF LONDON PARKS.—Sir John Lubbock has been trying to make a point against the London County Council on the ground of the cost of the parks. There is no more popular branch of the Council's work than its splendid management of the parks and open spaces under its care, and the cost of maintenance, calculated after Sir John Lubbock's manner, by the acre, is wonderfully cheap compared with the cost of some of the royal parks with which the County Council expenditure is compared. For example, if you are going to divide your cost by your acreage, the sum voted in the Estimates for the maintenance of Hyde Park, St. James's Park, and the Green Park is £36,650, for a combined acreage is a little over 500, or between £73 or £74 an acre. The expenditure per acre complained of on the part of the County Council is £28. The absurdity of a calculation by the acre in the case of the parks is shown by the comparison of the cost of the royal parks above mentioned with Richmond Park, which costs the county £2250, but is of so large an acreage that, measured in this way, its cost is a little less than £1 per acre. The County Council's park expenditure includes the wages of constables who patrol the commons and open spaces for the protection of the public and their children, and many other charges which have little to do with acreage.—("Daily News.")

— A VERY MILD WINTER IN IRELAND.—Probably the proverbial oldest inhabitant cannot remember a milder winter than that already passed. Most of us remember very severe weather after mid-February; but in the south of Ireland it is very unusual, and never of long duration. It is providential, so far as the humbler classes are concerned, whose daily dietary the Potato still forms so large a fraction, and which in many districts failed badly. I shall not harrow your readers by a speculation as to what might have been the consequences had the winter—unfortunately, not yet quite over—been unusually severe. Looking through my garden (which is a comparatively small town one), I notice several plants continued to grow and bloom the whole winter through, notably Mignonette, Violas, Pansies, and many Ten-week Stocks; while Gladioli, several bulbous Lilies, Irises, Columbines, and Anemones never ceased growing. Such hardy Tea Roses as Gloire de Dijon, Madame Bernard, and even Devonensis and W. A. Richardson never lost a leaf, and have now flower buds half an inch in diameter. Some of my neighbours, with specially constructed rock gardens and alpine collections, can produce lists of flowers that would be reasonable two months hence. Indoors, the greenhouse and vinery show precocious progress, and indicate an unusually early season. The great look out for the next month or more, however, will be the fruit crop. Some Pears are unusually forward. One expects Jargonelles to be early, but Beurré Superfin and Bergamot are bursting into bloom; and others, like Bon Chrétien and Beurré d'Amanlis, are masses of bloom buds. Some of these were equally so last year; but, alas! a "killing frost" one night "cooked them." I had tried folds of fish netting, but it proved useless as a protection. Except Irish Peach, Apples are still dormant; but Plums are preparing to burst open their fruit buds, especially Victoria, Green Gage, Transparent, Pond's Seedling, and Orleans. I have protected a Nectarine and Apricot that promise well on a south wall. In the farming world, everything speaks of an early spring. Young January lambs are frisking about. The fields are unusually green, the growth of grass having never been checked. Several instances of young thrushes and blackbirds are related; notably thrushes at Ballygowan, co. Down, and blackbirds at Newtownbarry, co. Wexford. The reported presence of the cuckoo is, however, doubted.—W. J. MURPHY, *Clonmel*.

— THE GROWTH OF LAWN GRASS.—It is evident that the mowing machine will soon be required, as the grass is becoming quite thick, long, and luxuriant. March is usually soon enough to commence cutting, but should the present mildness of the weather continue it will be essential to make a start earlier.—E. D. S., *Gravesend*.

— ESSEX MANURING EXPERIMENTS.—In some recent experiments in manuring in Essex the following results were obtained; but they only endorse principles which have previously been determined by some of our leading agricultural chemists, hence they are valuable on that account. (1) Phosphate manures both increase the quantity and improve the quality by increasing the proportion of Clover. (2) Nitrogenous manures increase the quality, but decrease the proportion of Clover. (3) Lime increases the proportion of Clover to a remarkable extent.

— WINTER AT LAST.—It is reported that South Buckinghamshire and Bedfordshire experienced their first real touch of winter on Monday night and early on Tuesday morning, when a succession of blinding snowstorms prevailed. The weather was bitterly cold, and farmers welcomed the change, as the cereal crops were in too forward a state. Heavy falls of snow have been experienced at Bath, Cheshire, Devonshire, Dorset, and Somersetshire. Severe weather is said to have set in in the Fen district; on Tuesday morning 13° of frost were registered, and 18° at Market Harborough.

— HORSFORTH GARDENERS' IMPROVEMENT SOCIETY.—A lecture was given on Monday evening, February 14th, at Horsforth, by Mr. W. A. Clarke of York, who took for his subject "A Ramble Through the Lake District." The lecture was of a very instructive character, all the principal mountains and lakes in Westmoreland and Cumberland being fully illustrated by lantern slides, showing different sections of the mountains inhabited by plants of various kinds. The meeting was well attended by gardeners from different parts of Yorkshire. At the close a vote of thanks was given to the lecturer, which terminated a pleasant evening.—P.

— EARTHQUAKE EFFECTS ON PLANTS.—Mr. W. Helps, writing to the Agri-Horticultural Society of India under date 14th August, states:—"A most remarkable thing has happened to all my Papaya trees since the earthquake. I am sending you some of the fruit to see the condition they are in, and you know what fine ones I had. The fruit I am sending you were the same size as when the earthquake took place on 12th June, so that growth in the fruit has been stopped entirely in some remarkable way since then, but not in the plant, which is still growing and flowering in the usual way. It is not one plant only affected, but every one I have. Can it be the earthquake I wonder, for all plants are very healthy looking? Fruits that have formed outside the influence of the earthquake, a foot or more above where the specimens have been taken from, are growing, and are from three to four times the size of what I send you." The Secretary of the Society writes:—"The specimens received were the size of an ordinary duck's egg. In the Society's gardens it has been noticed that little or no progress has been made in the growth of Papaya fruit since the earthquake." The foregoing is taken from the Society's printed proceedings for July to September, 1897.—("Indian Gardening.")

— NOT THE PLACE FOR GARDENERS.—A recent visitor to the home and farm of Rhodes in Rhodesia has given the following description of it. The farm at Inyanga is about 5000 feet above the level of the sea. Its size is about 3000 acres, and the house stands in the middle of it. It is without fence or hedge of any sort, but is well watered by streams from the mountains, and the soil being particularly rich almost anything could be grown there if it were not for the locusts, which for two-thirds of the year swarm in countless myriads, eating every blade of grass and leaf, in fact everything green on the farm. The kitchen garden being a particularly favourite spot of theirs, it is almost impossible to grow vegetables or to get any fruit. Woe betide the spot which they may select for their night's resting place, for it is brown and dried up next morning as though parched by a long drought. It has truly been said that God's hand rests heavily on this land, for the plagues of all Egypt seem to have settled on Rhodesia, as, in addition to locusts, drought, flies, and fevers, there are rinderpest, scab, tsetse fly, ants, sand storms, whilst the fatal black water fever and painful jigger insect are by no means unknown in the Umtali district, making life in our new territory almost unbearable to Europeans. Little wonder is it then, to find prospectors and miners leaving this part of the world to risk the cold of Klondyke in preference. It could scarcely be anticipated that the name of the home is "Fruitfield."

— **STIMULANT FOR GRASS.**—Kila dust is a manure which acts quickly upon grass, causing a strong and luxuriant growth. It is a nitrogenous and potassic manure, and may be applied at the present time, distributing evenly.—E.

— **BAMBUSA PALMATA.**—Of the dozen or more dwarf, hardy Bamboos, this is probably the handsomest in habit and foliage. When grown in fairly good soil in a position where it is protected from cold winds, it quickly makes a large mass, and forms a pleasing change from the ordinary run of evergreen shrubs. Two large masses are to be seen in the Bamboo garden at Kew. It there grows to a height of about 4 feet, with leaves 1 foot long by $3\frac{1}{4}$ inches wide. It suffers more from cold cutting winds than from frost, the edges of the leaves being turned brown, hence the need of shelter from the north and east. Like other Bamboos it requires plenty of moisture, consequently it should not be put in places where the ground becomes very dry in summer. When fully established a top dressing of decayed leaves and cow manure should be given every spring.—W. D.

— **DO POTATOES NATURALLY DETERIORATE?**—Reading over the latest epistle to your readers from the apostle Mr. Fenn—or shall I now say the patriarch, for he is verging on to eighty years—I was reminded of a fact of which he informed me a few months since, that his crops of his own raised Potatoes were last autumn of the best he had ever lifted. They were indeed as good as Potato crops could be. I have on several occasions seen these said stocks lifted on the same ground on which they have grown for twenty years, and have always found them good, Mr. Fenn varies his crops by planting rows of Potatoes wide apart, and has Cauliflower or some similar crop planted between. Then the following year the Potatoes come where the green plants were. That is not culture according to Cocker, but it is according to Fenn. Now it has often occurred to me that if varieties of Potatoes do deteriorate, as is often said of them, how is it that Mr. Fenn's, some of which have been raised over thirty years, probably thirty-five years, and the stocks of which he has grown himself, either at Woodstock or Sulhampstead, have rather improved in robustness than have lost strength; and if his, why not all others? I do not believe the deterioration theory where culture and storing are good. The Asbleaf Kidney has been with us over sixty years, and it is good as ever. That is doubtless due to thorough maturing, and because liable to sprout early, very careful keeping through the winter. Mr. Fenn has never allowed his seed tubers to be wasted by bad storing. Could our Potato patriarch but live other eighty years, no doubt he would still have as good as ever the fine varieties he raised so long ago. We injure Potato constitutions by our bad practices.—A. D.

— **PROHIBITION OF AMERICAN FRUIT INTO GERMANY.**—Reuter's Agency transmitted from Berlin on the 4th inst. intelligence of a rather serious nature relative to Californian Pears. Here is the message that appeared in the "Daily News." The official "Reichsanzeiger" publishes the following:—"The report published by the American Agricultural Department on the San José shield louse gave rise to an official inquiry here into the circumstances under which fruit is imported from America. On January 29th Professor Frank found on some Pears which were obtained from a consignment of Californian fruit, entered in the Hamburg free port, numerous living shield lice, in a condition to propagate, which the Professor found to be absolutely identical with the true San José shield louse. He consequently expressed the opinion that the home fruit cultivation was exposed to great and imminent danger by the importation of American fruit. A conference of other important specialists and the reports of the Imperial Office of Health confirmed this view in every point, and thus the necessity of prompt measures of protection was fully demonstrated." The "Reichsanzeiger" goes on to describe in connection with the publication of the Washington Agricultural Bureau, the extraordinary perniciousness of the San José shield louse, as well as the measures which various American States, notably Oregon and British Columbia, have taken against it. The official organ then continues:—"It is thus the unavoidable duty of the Government to give efficacious protection to the home fruit industry from the threatening danger of disease. Therefore is the importation of living plants and fresh plant refuse entirely prohibited, subject to the condition that at the port of entry of the said imports investigation of the consignment establishes the presence of the San José shield louse." The "Reichsanzeiger" shows by the example of the phylloxera the danger of not adopting immediate measures of protection, while contrariwise the Colorado beetle was kept out in time. The journal announces the regulations which are to be adopted internally to combat the shield louse, and expresses the hope that the German fruit industry, on which a large community depends for its livelihood, may thus be protected from danger.

— **WOOD ASHES FOR FLOWER GARDENS.**—There is no particular difference between equal weights of ashes from hard or soft wood. The reason for the erroneous common opinion on this point is due to the lightness of soft wood ashes, which makes it necessary to use a very large bulk of them to get the equivalent of a small bulk of hard wood ashes. As to using ashes as a substitute for stable manure where the latter cannot be obtained, it must be said that ashes are only a special fertiliser containing potash and a little phosphoric acid. Stable manure contains these and adds a considerable content of nitrogen, which is usually the greatest need in flower growing. For this reason ashes do not make a good substitute for a stable manure, but in ashes and nitrate of soda the various needs of the plants are ministered to. If leaf mould is to be had, its use in connection with ashes should produce good results.—("American Agriculturist.")

— **THE HESSLE GARDENERS' SOCIETY.**—A meeting of the above Society was held on February 15th, when the popular member, Mr. C. Lawton, gardener to W. H. H. Broadley, Esq., Welton House, Brough, read an interesting and practical paper on "Greenhouse Plants and Their Culture." The essayist commenced by describing the most suitable structure, method of ventilation, and stages, passing on to the general management. In the cultural portion of the essay he confined himself entirely to the hardwooded section, and anyone who has seen the splendid and well cultivated plants belonging to this class at Welton House would not attempt to criticise Mr. Lawton's method of cultivation. There was a very large attendance, and a good discussion followed, the essayist replying to his numerous questions in a masterly manner. Mr. J. Barker showed several pots of Narcissus in variety, and Mr. F. Mason, gardener to Alex. Smith, Esq., Woodleigh, Hessle, showed Cyclamen persicum in twelve varieties. A vote of thanks to the essayist terminated the meeting.—G. W. G.

— **THE MUNICIPAL PARKS OF LONDON.**—Lieutenant-Colonel J. J. Sexby, Chief Officer of the County Council Parks Department, has written a history of the municipal parks, pleasure grounds, and gardens of London, which will be published in May next by Mr. Elliot Stock. The book will contain about 200 illustrations. Colonel Sexby has devoted a great deal of attention to the preparation of this work, in which he will describe not only the leading features of the County Council's parks, but will also recount their history and associations. He has been engaged on this important work for several years, and has collected all local and other information which can possibly be obtained on the subject. No one is better qualified to write a history of London parks, as during the period that Colonel Sexby has been the head of the Parks Department of the County Council the area of the parks has been increased by over 1000 acres, and the special facilities for increasing recreation and public enjoyment introduced, which have made the London parks known throughout the world and the envy of other towns. ("London.")

LEEK CULTURE.

ON reading the excellent and practical article on the culture of Leeks on page 108, I was struck by a sentence from which I and many others will differ. I refer to the following:—"Earthing them is a mistake; nobody ever produced good Leeks in that way." The latter half of this sentence is, I think, too sweeping an assertion to pass uncontradicted, for many of our best growers grow their Leeks in that way.

In a contemporary, "The Garden" (vol. xliii., page 156), the late John Downie gave some interesting particulars regarding the growth of Leeks in Berwickshire as follows, some sixteen or seventeen years ago:—The late Mr. Henry, then gardener at Broomhouse, Berwickshire, was considered the best Leek grower in the country. On the 24th November, 1866, six of Henry's hybrid Leeks were lifted, cleaned, weighed, and measured. The following was the result:—

Leek No. 1,	circumference	12 $\frac{1}{4}$ inches;	weight	5 lbs.
" " 2,	"	11 $\frac{1}{2}$ "	"	4 lbs. 14 ozs.
" " 3,	"	10 $\frac{1}{2}$ "	"	4 lbs. 12 ozs.
" " 4,	"	9 $\frac{1}{2}$ "	"	4 lbs. 10 ozs.
" " 5,	"	8 $\frac{1}{4}$ "	"	4 lbs. 8 $\frac{1}{2}$ ozs.
" " 6,	"	8 "	"	4 lbs. 7 $\frac{1}{2}$ ozs.

Total weight of the six Leeks... .. 28 lbs. 4 ozs.

Two of the leaves when stretched out measured 11 feet in length, and varied in breadth from 8 to 14 inches.

I may add that I knew the late Mr. Henry referred to personally, and have seen his Leeks growing many a time, and for competition purposes he always grew them in trenches like Celery, and earthed them up. Thus we see that good Leeks have been produced in the way in which "Old Grower" said nobody could produce them.—W. H. W.

LAWNS AND ALLIED SUBJECTS.

THIS common, homely subject, lately broached by a brief article in these pages, plays so important a part in all phases of picturesque or ornamental gardening that a fairly comprehensive survey of it may not be inopportune at this particular season; hence it is proposed, in the first instance, to study the ethics of lawn formation from a picturesque point of view—which, happily, are also conducive to good management and keeping—and then to follow up the various details on the lines of sound construction, which are not only capable of making our lawns features of beauty from their creation, but in their permanency. One thing is worthy of consideration at the start—viz., that as we are unable to evade the fact that the labour of keeping our lawns as they should be kept is no despicable figure in the annual bill of a garden's expenses, such should not be left out of our preliminary calculations, and I hope to show that at a minimum expense of labour the maximum of satisfaction is obtained, provided that forethought gives due consideration to these matters.

To view this subject as it should be viewed, or what may be termed the most important parts of it, we must for the nonce glance at it from the windows of what may range from the stately home to the picturesque villa, and in doing so the operations of the indispensable lawn mower can hardly fail to be regarded as a necessary evil. I have, indeed, heard stronger language used which, when toned down, admits of no other interpretation than that of the constant mowing being an intolerable nuisance; for there are places where, from such time the "noiseless" (?) one commences operations with the cuckoo until it ceases with the flitting of the swallows, it is so persistently in evidence that one may readily endorse, if not the remark, the feeling which prompted it. This should not be; no more, in fact, than that in our domestic arrangements the sweeping and garnishing could be tolerated from early morn till dewy eve. I may here digress by remarking that few gardeners, possibly, know better than the writer the difficulties to be met in this respect, to illustrate which I may mention one particular place where the whirring wheels dared not be heard before breakfast time, 9 A.M., or after luncheon at 2 P.M., and after the latter hour all workmen on the Italian garden had to be conspicuous by their absence.

Interdicts similar to the above applying to a large extent of ground are not matters to be lightly regarded where high keeping is a *sine qua non*; but, upon reflection, the principle is right. *Apropos* of this, I occasionally through the summer visit one of our best kept public gardens, and at whatever hour of the day or day of the week such happens, one never is able to view the charming central lawn in all its pristine beauty, for mowing in some shape or form appears to be always in evidence—the season through the operation is never finished. Whether in this case it is unavoidable, I know not; but in private places it, to me at least, seriously detracts from the enjoyment of this grand feature of our gardens. Yet, on the larger scale, where high art in the garden is exemplified in the Italian style, the evil, if evil it be, is probably least in evidence, for we have here a boldness of design which includes open stretches of lawn so disposed as to facilitate the work of mowing which does not always obtain with a totally different arrangement of the grounds.

This brings us to what, I think, is worthy of attention, being, too, of more frequent occurrence, embracing as it does the very large section of what may be termed the picturesque in contradistinction to the purely classic, which admits of few liberties being taken with it. Needless to say, no hard-and-fast lines can be laid down, for there is not, I suppose, a single instance where local circumstances do not sufficiently assert their individuality to warrant the assumption that a special study of character is alone able to give the best results. I cannot but regard our subject as one inseparably bound up with landscape gardening. Is it not, indeed, the very folio upon which its best characters are traced? Hence, perhaps, no apology is needed for enlarging so much upon the text.

In the picturesque treatment (not classic) of grounds in contiguity to the residence so many temptations occur for breaking up the more important portions of the greensward by various phases of planting as well as by a redundancy of walks, that, although not always courting condemnation from a picturesque point of view, it militates more or less seriously against good management of the greensward, including the quick and effective performance of periodic mowing, consequently the scenic effect is correspondingly stultified. This, of course, chiefly from the labour side of the question; but there is a broader and, I think, higher view that insists itself upon our notice in spite of that variety which may, or may not, be charming, for the taste is questionable which prompts the planter to bring as many beds as he can carve out, or as many trees as he can conveniently dot down within sight of the windows. Much quiet beauty is thus sacrificed. I have heard it

remarked that the flower beds do so much for the lawn; to me, at least, it appears to be *vice versa*—that the lawn is able to do so much complementary work that too much, far too much, is literally put upon it.

To trace effect to cause in so far as relates to the breaking up by planting or other means of many a charming lawn-frontage to a picturesque residence, the term may be admitted in contradistinction to classical outlines which need no longer detain. We may go back to the earlier days of the bedding craze, and also include the introduction of various Coniferae which claimed a great share of attention; so much so, in fact, that whilst the former inculeated much carving out and cutting up of the lawn, there seemed an inordinate desire to dot *hic et ubique* a Wellingtonia, a Picea, a Pinus, or what not, and to bring particular specimens into prominence by placing them in the immediate foreground—in view of the windows. Having a vivid recollection of how to spoil a lawn, it may, although roughly sketched from memory (fig. 25), serve to illustrate this. It is representative of the south front of an old Tudor residence bounded on the north by a public road. It delineates what is still frequently to be seen. A replica of the outline is also given (fig. 26), which cleared consistently, not ruthlessly, gives a bold sweep satisfying to see, easy to keep, and lending a dignity to the building which with the dot and carving system can never obtain. It must be mentioned that fully two-thirds of the beds have recently been turfed over to the general benefit of all concerned but the trees, which have grown apace; the liberty of sacrificing them has only yet been done on paper, as shown, but sooner or later the great mistake will have to be rectified, and it has long been under consideration.

In relation to keeping alone, it is obvious how much unsatisfactory labour is entailed, and although I have often watched the agility displayed both by the man who controls the machine and the boy who controls the pony, together with the marvellous manner in which they conjointly manœuvre in and out and round about to snip off a bit here and a corner there in their anxiety to save the scythe, not to speak of wet weather, when a dozen repeated turns at particular corners leave greasy patches, one cannot regard such work as a labour of love.—SYLVA.

(To be continued.)

THE FLORISTS' PHLOX.

GRACEFUL and effective as are the original plants from which our Phloxes of the present day have been raised, they are defective when compared with their descendants. The florist, with his trained and skilled eye and expert hand, has seized upon their points of beauty, and developed them almost beyond his utmost hopes. Not often do we see the old tall Phloxes, once the delight of their growers, and favourites with artists in flowers; but when we do meet with them, we are compelled to admit their inferiority as compared with those of more recent origin.

In purity, brightness, or depth of colour; in size, form, and texture of flowers; and in massiveness of spike, the modern florists' varieties rank far above the older sorts or those from Nature's garden, where the law of the survival of the fittest discourages flowers less well adapted to the rough conditions under which they grow. In our gardens, however, where shelter is found, together with suitable soil, and a sufficient but not superfluous supply of moisture, the flowers of the most advanced types not only grow, but afford the means for still further improving the race.

For the original parents of our modern Phloxes we are indebted to North America, a part of the globe which has given us many of our most admired garden flowers. For the florists' Phlox itself we owe gratitude to raisers of various countries, as English, Scottish, and Continental growers have all contributed their share of the work. In the early days of its improvement, English growers took a leading part, followed hard by Continental raisers, and then by Scotsmen, who gave us many good varieties. More recently the Phloxes which have met with the favour of the Floral Committee of the Royal Horticultural Society have principally been of French origin.

Several of these varieties have, in the eye of the writer, the defect of too flat a spike. Their great merits are the size of the individual pips, their texture, and their intense colouring. Some of the scarlets are of the most vivid colouring, and were these merits combined with the symmetrical spikes of some of the older ones, there would be nothing lacking. A marked tendency on the part of raisers of late has been to reduce the height of the plants, and in some flowers this has been effected without the loss of other points. The judging code of the R.H.S. gives these, and they may be thus summarised:—Stem stout, strong and erect; spikes full of bloom, dense, and of symmetrical shape; the blooms stout in texture, flat, and quite circular in form, with clear, decided colours.

The colours of the Phlox are most varied. There are whites of

various degrees of purity; some are without a tinge, others are almost cream-coloured, and others, again, have just a sufficient tinge of blush to give them warmth. There are pinks, roses, scarlets, vermilions, pale purple, deep purple, slaty blue, and the blue-purple of one named Iris is the nearest approach to blue in the florists' Phloxes. These shades of purple and blue are not much admired, however, and do not gain in favour, although at times useful on the exhibition stand. There are also striped and "eyed" blooms. The latter are more appreciated than the striped varieties, and many are very attractive, if a little formal. In some the eyes are white or light coloured with a dark margin, and in others this is reversed, the eye being darker than the body of the flower.

There are two races of the summer and autumn flowering Phloxes. These are divided into early and late flowering varieties. The former are said to have originated from *P. glaberrima* (*P. g. suffruticosa* of some), and the latter from *P. paniculata* and *P. maculata*. The early flowering section are as a rule dwarfer, and have not reached so advanced a stage of beauty as the others, but are nevertheless of great merit.

The florists' Phlox is of much value in the garden. Massed in beds or borders it is very effective, and planted in the mixed border it gives much beauty, although among other flowers its special wants cannot be so well supplied, and its distinctive charms are displayed to

exhibition must not be cut much before going into the stands, but if this cannot be avoided the stems should be deeply immersed in water for some time.

The Phlox is propagated by division of the roots either in spring or autumn, and by cuttings taken off in spring or summer. Plants raised from cuttings are preferred by exhibitors and those desiring more vigorous growth. The cuttings may be inserted in frames or pots, and will root more rapidly if a little bottom heat is at command. Short lengths of root placed in pots of light soil in winter will also grow, and in the case of scarce varieties leaves with a bud in the axil of the stem are sometimes used as a means of propagation. Young plants of small size ought to be kept in a frame during winter. New varieties are obtained from seeds sown as soon as ripe, or in spring. These should not be sown in heat, but in the open ground or a cold frame. The seedlings appear very irregularly, and some only after a considerable time.

The question of the retention of old plants is one which has been much debated. A plant which is in good soil and receives regular attention in the way of mulching, surface dressing and watering in summer, will last in good condition for several years if the stems are thinned out. Many, however, prefer to raise young plants every two or three years, and there is little doubt that this method gives very satisfactory results.

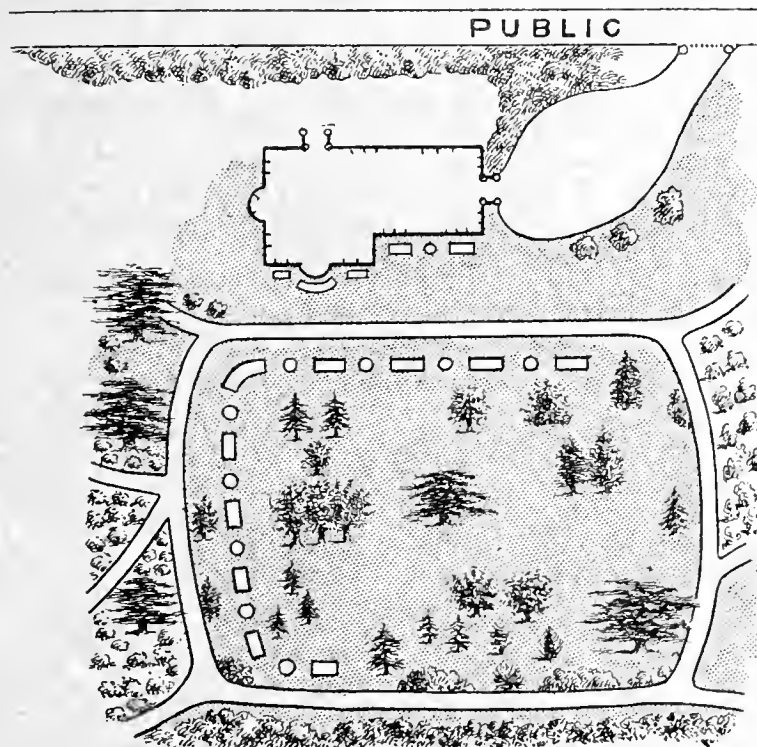


FIG. 25.—THE DOT AND CARVING SYSTEM.

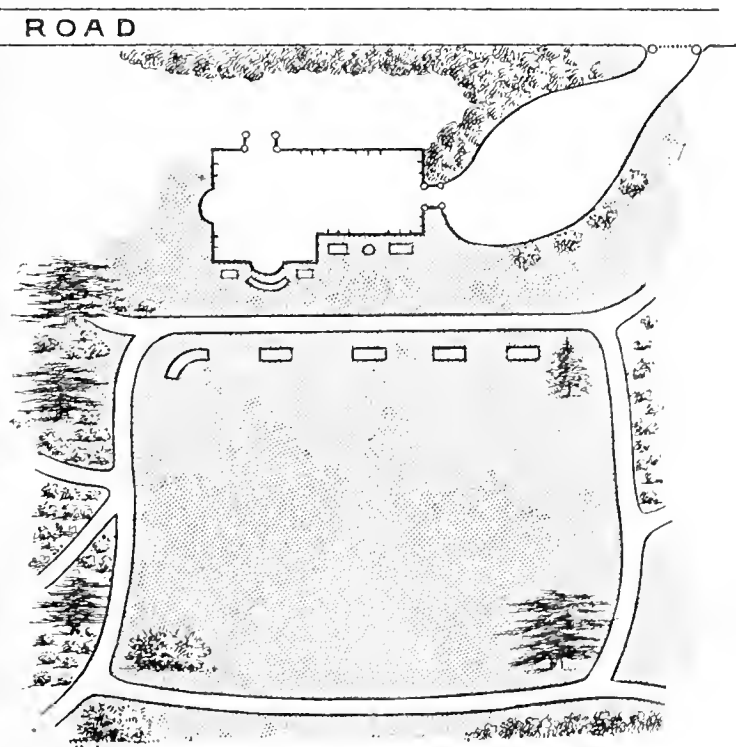


FIG. 26.—THE LAWN IN ITS BEAUTY.

an inferior degree. It requires rich feeding and some attention to enable it to develop its beauty to the fullest extent. Beds on the grass or in front of shrubberies are pleasing features of many gardens.

To do it justice the Phlox must be well grown. There is little hope of full success with it or other florists' flowers unless its requirements are carefully attended to. This is due to no want of hardiness, but is simply because the points we have developed require good treatment to bring them to their highest stage of beauty. The first essential is a good and rather heavy soil. It will grow in poorer soil, but something more than mere existence is needed if we wish to have this fine flower in perfection. The good soil at command, it must be properly prepared by bastard trenching, and the incorporation of an ample quantity of animal manure. Nothing equals horse or cow dung, which to use depending upon the soil, light soil requiring the latter. It ought, as a matter of course, to be well decayed. In the beds thus prepared the plants may be planted in March or April, the surface being afterwards mulched with similar manure. They should never be allowed to suffer by want of water, and in order to give greater vigour a little of some of the standard artificial manures may also be applied with the water, only the quantity recommended on the package being used.

If grown for exhibition purposes, Phloxes should only be allowed to make two or three stems, the others being thinned out. This will be found to give larger spikes and finer flowers, besides giving the former more room to develop. To prevent injury to the spikes each stem ought to be firmly tied to a light stake. In wet and stormy weather protection should be afforded to the flowers. The best method is by means of three stakes or stout wires fixed in the form of a tripod. A frame of wirework covered with canvas is placed over the top of this at night, or when protection is required. Phloxes for

The selection of a list of the best Phloxes is a task of great difficulty, and that now submitted makes no pretensions to including all the best. It is merely a selection of varieties of high merit which will give satisfaction if properly cultivated.

It is to be hoped that our British seedling raisers will again take up in earnest the improvement of the Phlox. It is not yet perfect, and the writer has within the last year or two seen some seedlings of great beauty raised in a private garden from flowers of the highest quality. Some of these will probably find their way into the hands of the trade, and one named "John Maxwell," in honour of a worthy friend of the writer's and a true florist, will compare favourably with any as yet before the public. In the following selection an old Phlox (*Coccinea*) is included. For bedding it is difficult to surpass, although inferior in size of pip to the newer varieties.

SELECTION OF PHLOXES.

Early Flowering Varieties.—Charles Downie, rose, crimson eye; James Thompson, deep rose; King of Purples, purple; Lady Halliburton, white; Lady Napier, white; Marquis, rose, crimson eye; Mrs. J. Hope, white, crimson eye; Purple Emperor, light purple; the Marquis of Huntley, veined rose; and White Swan, white.

Late Flowering Varieties.—Amazon, pure white; Aurore, orange scarlet; Bayadère, pure white; Coccinea, crimson; Cœur de Lyon, lilac; Corneville, dark wine colour; Diadem, white; Eclatant, rose, crimson eye; Eugène Danzanvilliers, lilac, white eye; Eugène Scholt, rose, white eye; Henri Mürger, white, rose centre; John Forbes, pink, crimson eye; Madame Antoine Denis, blush, crimson eye; Mrs. Kinghorn, salmon rose; Pantheon, salmon, white eye; Regulus, rose-salmon, white eye; Roxelane, deep carmine; Sheriff Ivory, salmon; Sylphide, white; and Tourbillon, crimson, white eye.—S. ARNOTT.



THE NATIONAL CHRYSANTHEMUM SOCIETY AND THE ROYAL AQUARIUM.

"My determination's great this enterprise to further."

THUS the opening of the "Drama," on page 150 last week. The utterance has proved true in a manner that the dramatist could not have imagined, or certainly he could not have known of the intention of his first character in the piece.

Mr. J. W. Moorman has issued an eight-page pamphlet, entitled "The National Chrysanthemum Society and the Royal Aquarium. The Society's Shows and Management, with Suggestions for Consideration." After a review of the whole question the author and compiler gives condensed citations from the correspondence which has appeared in the *Journal of Horticulture*, also extracts from other journals, which are in accord with his views. He admits that the "masterly review by 'Spectator'" is beyond his power of abridgement, and therefore publishes it *in extenso*, and concludes as follows:—

WHAT IS TO BE DONE?

"I am sanguine that this controversy must eventually result in the true and lasting interests of the National Chrysanthemum Society, and to that end the following points, in addition to those previously mentioned on page 4, appear to require ventilating at the annual meeting:—

FIRST.—Whether the time has not arrived for the Society to have a paid Secretary and no vote?

SECONDLY.—That it be an instruction to the Committee to inquire and report on what other places (if any) can be obtained for our exhibitions, either by a subsidy, as now, or otherwise?

THIRDLY.—To consider if the time has not arrived when in reliance on our own resources we can proceed on independent lines like most provincial societies, which are in a sound financial condition?

FOURTHLY.—As there appears to be much disquietude arising from the fact that the Secretary is the delegated referee at all our exhibitions, whether the advisability of a change should not be considered in the form of a small Reference Committee or otherwise?

FIFTHLY.—That as the custom of selling the floor space of the Aquarium to trade exhibitors (some of whom are not *bona-fide* growers of Chrysanthemums), and that inasmuch as such sales have driven competitive exhibits of Chrysanthemums into semi-dark galleries upstairs, whether such custom of selling space for a different purpose than that for which the National Chrysanthemum Society was established shall be seriously considered with a view to its discontinuance.

SIXTHLY.—That an Exhibition Committee be appointed to closely examine the question of minor shows with the object of ascertaining their advantages or otherwise, to the Society, and report the results of their investigations to the General Committee.

"Having done what I conscientiously felt it to be my duty in seeking to extricate the National Chrysanthemum Society from an incongruous position, which alienates an important and wealthy section of the community—a section which would otherwise join in placing the Society in the commanding position it ought to enjoy—I now earnestly request the hearty co-operation of all who desire its freedom, independence, and prosperity.—J. W. MOORMAN."

"What is to be done" only time can tell. We have received many letters expressing appreciation of the "Drama," but are bound to say that the great majority of the writers concur with the author's prophetic utterance—"The big braves hang back, I win." One correspondent goes so far as to say that he will be "much surprised if Mr. Moorman has one supporter at the annual meeting." Another writes in a valedictory way as follows:—"Now ye masked mummers, assemble in your thousands in the big 'smoking concert' room of the Handy-Andy Hotel on Monday night next, and when the combat is over shed a tear for the man who is no more."

Let the issue be what it may, we have to congratulate all our correspondents who took part in the memorable discussion on the excellent tone and spirit manifested throughout. Mr. Moorman's epitome is a fair reflex of it, which many persons interested in Chrysanthemum lore will be glad to possess. The pamphlet can be obtained in return for 1½d. in stamps, sent to his address—The Lodge, Victoria Park, London, E.

MR. MOORMAN has kindly sent me a copy of his pamphlet, *re* the recent discussion in your columns, and elsewhere, respecting the connection between this Society and the Royal Aquarium. I am obliged to him for it, and do not in the least complain that he gives my initials prominence in it. Seeing that Mr. Moorman gives me the credit of setting the ball rolling, I can but be reminded of an old saying, "Behold how great a matter a little fire kindleth." What the effect may be on the Chrysanthemum community at large I do not know. Possibly very little. If there were one tithe the desire manifested in relation to the queen of autumn flowers to worship her only for love, no doubt a great change might eventuate, but my interest in the Society has become a thing of the past. I am no longer a member, and its affairs are to me a matter of absolute indifference.—A. D.

NATIONAL CHRYSANTHEMUM SOCIETY—GENERAL COMMITTEE.

THE General Committee of this Society held a meeting on Monday last at Anderton's Hotel, Fleet Street, when Mr. T. W. Sanders presided. There was a good deal of business to be done, and much discussion on matters arising out of the minutes and correspondence, but chiefly of a formal nature. The Foreign Secretary reported on several matters of interest, showing that the work of the Society was becoming more widely appreciated abroad, but particularly in Germany, where Chrysanthemum culture is arousing the attention of growers.

The report of the Classification Committee was then presented, by which it seems that different varieties are sometimes shown so closely resembling one another that it is desirable to lessen the risk of duplicates being shown. Instances were cited of Mrs. Heale and Princess of Wales, Charles Curtis and Major Bonnaffon having been staged in a condition that rendered them almost identical. A good deal of time was spent in reviewing this report, and finally, on the motion of Mr. Crane, it was resolved that the report be referred back to the Committee for them to prepare a list of too much alike varieties. The undermentioned varieties are now classed by the Committee as incurved:—Austin Cannell, Ernest Cannell, General Mauric, Lady Isabel, Lyne, jun., Mdle. Lucie Faure, Madame Ferlat, M. Desblanc, Owen's Crimson, W. Carpenter, Yvonne Desblanc, Mrs. N. Molynoux, Harold Wells, and Sir Trevor Lawrence.

Next followed the draft report, in which the progress of the past year was set forth. Numerically the Society has improved, there having been elected thirteen Fellows and 114 ordinary members, and affiliated societies increased by eleven. The draft financial statement was also considered, and shows the income for the past year to be upwards of £1100. Both of these documents will be laid before the annual general meeting on Monday next in their entirety. The Secretary drew attention to the increasing amount of prize money offered year by year, and pointed out that prizes of the value of over £500 were provided for in the new schedule for 1898.

A communication from the Treasurer, Mr. J. R. Starling, was announced, resigning his office on account of ill-health. A vote recording the thanks of the Society for his long service was passed. The annual meeting of the members of the Society will be held on Monday next, at seven o'clock, when Mr. Sanders, the Chairman of the General Committee, has been requested to preside. Owing to the lengthy agenda the meeting was not over until unusually late.

THE BELFAST SHOW.

I OBSERVE from a communication on page 152 of your last issue, that Mr. Beckett asks me to deal with a complaint made by Mr. Peter Brock, on page 122 of the previous week. I had, of course, already seen Mr. Brock's letter, but considered that, as he was clearly complaining of the judging, if any answer to it were necessary, it would be from Mr. Beckett it should come, and I had not, therefore, proposed to intrude upon your valuable space. As, however, Mr. Beckett appeals to me on the matter, I venture to ask you to insert this letter.

As regards the circumstances under which the bloom was named, I can only say that it was precisely as Mr. Beckett has stated. My instructions to my assistant attending the show were that the bloom was to be labelled, "Yellow Madame Carnot," and the first intimation I had of the affixing of a different description was the evening after the Belfast Show, when I heard of it at Edinburgh, where I had gone for the purpose of the show there, and I was very much surprised that any question had arisen on the matter. As to the description of the bloom as a "Yellow Madame Carnot," I can only say, what is in fact common knowledge to all Chrysanthemum growers, that there was then no standard by which the exact shade of yellow of that variety could be fixed; and knowing that my blooms were from very early buds, I naturally thought that later blooms would come a deeper yellow, and that therefore there could be no possible doubt that it was the "Yellow Madame Carnot," and I named it accordingly.

Having regard to this, and to what Mr. Beckett has already stated, I think all fair-minded men will agree that there is no necessity for me to deal further with Mr. Brock's communication, except to add that it is impossible for him more than myself to say what any other judges would have done if they had been in Mr. Beckett's place; and that I am sure if Mr. Brock had known Mr. Beckett as well as he is known to the generality of growers, including myself, he would not have made such a remark.—W. MEASE, *The Gardens, Downside, Leatherhead*.

COLLARETS FOR CHRYSANTHEMUMS.

WHILE not encouraging the use of collarets as an aid to displaying Chrysanthemum blooms, I should not take upon myself the liberty of disqualifying an exhibitor who made use of them if no mention of them were made in the schedule. I should, however, take care that such an addition did not assist the exhibitor in securing a prize. It is quite easy for a man of experience like Mr. Beckett to tell if blooms are artificially set up by the aid of collarets. The natural "build" of the blooms would point this out. Although not seeing the Belfast Show, I am quite sure the third prize blooms were sufficiently good of themselves to secure their position in the competition, even if there had not been a collar at all employed. How can a judge disqualify a stand of blooms purely because they receive a supposed aid from collars when no mention is made in the schedule? Committees, not judges, are responsible for any shortcomings of the rules or regulations.—SADOC.

NEW FRENCH CHRYSANTHEMUMS.

HAS not Mr. C. Harman Payne (page 153), made a mistake in classifying several of the varieties there named? For instance, -he

describes *Mdlle. Lucie Faure* as a Japanese incurved. He gives it as his opinion that this will probably rank as one of Calvat's best. Surely Mr. Payne is aware this variety has been certificated as an incurved by the N.C.S. Has he copied the descriptions from Calvat's catalogue, forgetting what his own knowledge should have taught him? From so high an authority as Mr. Payne such information is somewhat misleading to those who depend upon public writings for classification of foreign Chrysanthemums. Madame Ferlat is another instance of misrepresentation. It has been many-times staged in England and passed as a true incurved variety. Here it is described as "a grand massive Japanese incurved of great size and substance." This statement is hardly correct; as an incurved Chrysanthemum it is not massive, neither is it grand as I interpret the word. How, then, can the remark be applied to it as a Japanese incurved? *Topaze Orientale* is claimed by many to be a very good form of Chinese incurved. Exception might easily be taken to the description given of Madame Ed. Roger if judged from an English point of view. "This is a most distinct novelty, being of a pale but decided sea green colour." This is the description given of it. One naturally asks how it is a "distinct novelty." Is it the colour that makes it so, or is it the misshapen blooms so often seen on the narrow pointed florets which characterise the variety?—OBSERVER.

EQUAL PRIZES.

I HAVE read carefully the correspondence which my note has brought forth. I must confess that I see no reason to alter my views from the weight of arguments adduced by the various writers. The parallel drawn by Mr. Beckett as to decisions given by judges in racing is not a happy one. In this case it is purely a physical action on the spur of the moment. Not so with flowers, or any other horticultural produce, where so many points of detail have to be taken into account. I, too, saw the disputed groups at the York Show, and heard many comments passed upon them, and I admit these two exhibits required much consideration on the part of the Judges. I was not alone in my opinion (not expressed) that it was possible to find a first prize where so many details admit of comparison, and especially when one of the exhibits contained a host of small blooms closely packed together. On the other hand, it was not difficult to see the other exhibitor might have made more of his Chrysanthemum blooms if he had made them less. This may seem somewhat of an enigma!

I am afraid the instance cited by "W. S." of the action of certain judges at a West of England show does not assist the solution of what is to some an insurmountable difficulty. In the case in point the fault was distinctly that of inability, as the result proved. The *Dahlia* case, quoted, too, by "W. S.," affords another instance of dissatisfaction; it is plain that the cultivators knew where the difference lay in some of the blooms referred to. "W. S." says that the blooms "taken individually were a perfect counterpart of each other that it was impossible to find a determining point." This is surely a case of pitting the knowledge of the exhibitors against that of the judges. Perhaps these were such as "W. S." alludes to in the preceding paragraph? I would ask "W. S.," Could he go into the largest *Dahlia* nursery in the country, cut and stage two stands of twelve *Dahlia* blooms, distinct, that were really equal in point of merit of bloom, staging, and arrangement of colours? He may say yes, because he would, if possible, choose duplicate blooms. I do not think an instance can be cited where two exhibitors of flowers of any kind coming from separate gardens have staged identical varieties. I fancy "W. S." would find the task suggested a difficult one.

I have had a somewhat lengthy experience in judging Chrysanthemums in many parts of the country, and at all the leading shows in times gone by, but I never came across a similar instance to that named by "W. S.," where a cash prize and certificate could not be awarded together as in the instance named. I do not see any difficulty in distinguishing superior blooms in both sections when in opposition. Neither should any judge, if he has experience to aid him, in arriving at a solution of the difficulty. I have many times found a difficulty in selecting the premier bloom in the incurved section, but simply because the difficulty laid in finding a bloom that possessed sufficient points of approach to an ideal specimen. Generally prizes are awarded for the premier bloom in each section; when this is so, the difficulties of judges are lessened. Some adjudicators are so sectional, that they cannot see merit in a bloom if it does not belong to their pet division. Equal prizes are too often awarded under such circumstances. "Forlorn" (p. 108), cites an instance of how a cash prize and a certificate were divided. If "Forlorn" had given particulars of the blooms selected, a better opinion could have been given upon the wisdom or otherwise of the judges. The mere quoting of cases without facts does not advance the argument in favour of the awarding of equal prizes.—NOT A SOLOMON.

SHEFFIELD CHRYSANTHEMUM SOCIETY.

THE annual dinner was held on Wednesday evening, the 16th inst., when over ninety members and patrons attended. Mr. C. E. Jeffcock, the President of the Society, occupied the chair. Delegates attended from the Walkley Amateur Floral Society, the Sheffield Floral and Horticultural Society, the Rotherham Chrysanthemum Society, the Rotherham Floral and Horticultural Society, the Chesterfield Chrysanthemum Society, and Wakefield Paxton Society. The Leeds and Barnsley Societies were each invited, but no delegates attended. The dinner was held in the large room of the Masonic Hall.

After the loyal toasts, Mr. F. W. Littlewood submitted "The Lord Mayor and Corporation," which was honoured with great heartiness. Dr. Banham next proposed "The Visitors and Kindred Societies," to which several of the delegates replied. Mr. J. G. Newsham, in giving

the toast of "The President, Vice-Presidents, and Patrons," referred to the help given to the Society by those gentlemen, and especially by the President, who was always ready and anxious to do all he could to advance the interests of the growers of Chrysanthemums and of this Society in particular.

The President said the Vice-Presidents, the patrons, and himself appreciated fully the work done by the members, and especially the Committee and the working officials of the Society. They could not help being pleased with the improvement seen year by year, and the trouble taken by growers of Chrysanthemums to introduce novelties season after season. The success of the Society was due very largely to excellent management, and also to the desire on the part of the members of the Society to always be introducing something new.

Mr. A. S. Jarvis, in proposing "The Sheffield Chrysanthemum Society," referred to the fact the institution was sixteen years old. It was not a great age, but they had made great strides, and their Society would compare well with similar societies in any part of the kingdom. Sheffield stood well to the fore in the matter of its Chrysanthemum show, and the greatest credit was due, not only to the officials who worked so hard, but also to the exhibitors who year after year showed such excellent blooms. Mr. Houseley, the Secretary, in acknowledging the toast, referred to the excellent work done by the Committee. To them the success of the Society's work was largely due. He had it on the authority of one of the leading horticultural journals that the Sheffield Chrysanthemum Show held a position which was only third in the whole kingdom. Referring to the progress of the Society, the Secretary said that four years ago they had in hand the magnificent sum of 9s. 6d.; they were now worth over £100. Mr. J. Haigh gave "The Nurserymen and Non-competing Exhibitors," which was replied to by Mr. Artindale.

THE GARDENERS' ROYAL BENEVOLENT BALLOT.

THE remarks of Mr. J. Ollerhead (page 132), of this institution, should not go unchallenged. What are the facts in which he considers he has cause of complaint in his employer's behalf? A man who, I do not doubt, is a deserving candidate, is anxious to be placed on the list of pensioners, but who has never subscribed a penny towards the funds of this admirable institution. Consequently he has to take his chance of being placed on the list with others, some of whom have subscribed for several years. Others, again, are like himself, who in their years of prosperity failed to subscribe to the funds, and now, when the day of adversity has come, they appeal to the subscribers for their votes and interest in their behalf.

I fail to see where the hardship comes in. My sympathy is with those who have subscribed (or widows of such), and who have to stand their chance of election with the above. Mr. Ollerhead says, "My employer and family have subscribed a total of £168," and considers he has been badly treated because his nominee has not been placed on the list of pensioners. I hope the day is far distant before anything so high handed as he hints at may be allowed to have influence with our public institutions.

If all those kind and benevolent people who have so liberally subscribed large sums of money (all honour to them for doing so) to this grand institution were similarly minded as Mr. Ollerhead, and each selected a candidate at every election, on the same lines, he would find the subscribing gardeners throughout the country would make their presence known. Their subscription of a guinea a year, or ten guineas, of hard earned money to constitute a life membership, means really more to them than the £168 subscribed by the family of a gentleman of wealth. Are we to be ignored because fortune has not smiled upon us to the extent of the above mentioned figures?

Provincial gardeners are not able to attend the annual festival, but through the gardening press, and from the annual report issued to all subscribers, we are well informed of what is being done, and have every confidence in those who hold the reins of management. Although the majority of them are personally unknown to me, I believe they have the interest of gardeners at heart, and one has only to read some of the speeches delivered at the annual dinner to know of the many cases of real distress among gardeners, and how they have appreciated the assistance they have received from this noble institution.

I would here appeal to all gardeners, whether young or old, to try and afford a guinea a year to its funds; then, should adversity overtake them in their old age, they may have £20 a year for life simply for the asking, and without the expense of a poll, and also without the risk of offending, or the society of losing a rich subscriber in consequence.—S., *Yorks.*

RHODODENDRON PRÆCOX.—In various parts of the gardens at Kew this plant is now making a fine show. The great objection to its extended cultivation is that the flowers are often damaged by frost before they are over. This calamity has been partially averted at Kew by growing some of the plants in positions where they are sheltered from cold winds, and where the sun does not shine directly on them until midday, the flowers thus thawing gradually. Anyone who has been unsuccessful with this plant, and has similar situations at command, would do well to try the plan. For greenhouse work, either forced for Christmas or allowed to come on naturally for flowering during February, it is among the best of the genus, and is well worth a place in any establishment.—K.

ROYAL GARDENERS' ORPHAN FUND.

ANNUAL GENERAL MEETING.

UNDER the presidency of W. Marshall, Esq., the annual general meeting of this admirable charity was held at Anderton's on Thursday last, the number present being about two dozen. Amongst others noted were Dr. Maxwell, T. Masters, and Messrs. Harry J. Veitch, A. Outram, G. Gordon, J. Fraser (Kew), G. W. Cummins, J. Walker, R. Dean, H. J. Jones, J. Lyne, B. Wynne, H. B. May, W. Bates, J. McLeod, and A. F. Barron, Secretary. The majority of those present were members of the Committee, and it speaks well for the management that the subscribers are content to leave the affairs of the Fund in the present able hands, and do not feel constrained to attend the general meeting to set matters straight.

The adoption of the report was moved by Mr. W. Marshall in brief terms, which added nothing to the statements given above. Mr. W. Bates seconded the motion, which was carried unanimously. The Treasurer, Auditors, and Secretary were re-elected without a dissentient voice, as were those retiring members of the Committee who were standing again. Messrs. A. Outram and G. H. Richards were elected in place of Messrs. H. Ballantine and H. Cannell.

Messrs. R. Dean, H. B. May, J. Walker, and J. F. McLeod were appointed scrutineers of the ballot for the election of children to the benefits of the fund. Eighteen candidates were presented, and the following were elected. Agnes Macintosh, 349; Robert John Smith, 332; Jamesina Baird, 278; Lydia Annie Milne, 275; Hermine Kosbab, 272; William Ewart Holmes, 269; Ruth Amy Worth, 241; Margaret Annie Richardson, 232; and Constance Mary James, 209. Annie Kathleen French, with 166 votes, was elected to the benefits derived from the J. W. Thomson legacy.

THE REPORT.

The Executive Committee, at the close of the tenth year of the existence of the fund—it having been established in 1887—can look back with pride and satisfaction upon the substantial progress made during that decade. The Royal Gardeners' Orphan Fund is now firmly established among gardening institutions, and during the period of its operations, while it has succoured a large number of orphan children, all of them in necessitous circumstances, it has also been able to invest a small reserve fund. Your Committee feel they can heartily congratulate all those constant and earnest supporters of the fund, who, since 1887, have rendered such valuable and acceptable aid.

In submitting their annual report and financial statement, your Committee have to record with some feelings of regret, that the receipts of the past year have not been so satisfactory as could be desired, and would, therefore, urge upon the friends of the charity the necessity of increased efforts during the ensuing year.

One very gratifying feature has to be recorded: the receipt of letters of deep thankfulness from the mothers and guardians of children who have ceased to be chargeable to the fund, owing to the operation of the age limit. One mother, after expressing her sense of most timely help, observes:—"I sincerely hope that my children may help the fund as they have been helped by it."

Besides the ordinary payments of the sum of five shillings per week to orphan children, your Committee have made special grants in necessitous cases to children on leaving school, or being apprenticed to some trade, thus giving them a start in life. The sum of £22 10s. has been expended in this helpful way during the year.

During the past ten years ninety-eight children have derived benefit from the fund; of this number, sixty-two are now receiving a weekly allowance. This number will be increased by those fortunate enough to

secure election to-day. The total amount paid to children since the fund was instituted is £5807 5s.

Another most gratifying circumstance is the amounts received from collecting boxes, the proceeds of concerts, sales of flowers, &c., at provincial flower shows. Among the most important donations are those of £50 from the Scottish Horticultural Association, part of the proceeds of the magnificent exhibition of Chrysanthemums held in Edinburgh in November last, and £26 5s. from the Royal Caledonian Horticultural Society. The Chislehurst Gardeners' Society have contributed £23 12s. 6d., and the Altrincham Gardeners' Society £18 8s., proceeds of concerts. Smaller sums from other societies have been received and proved equally acceptable; such receipts have now become an important source of income, and your Committee tender their most grateful thanks to all who have so materially helped to swell the resources of the fund. The sum of £457 5s. 11d. has been received as a bequest made by the late Mr. J. W. Thomson, of Hayward's Heath, formerly a well-known nurseryman, and invested in accordance with the terms of the will. This legacy will henceforth be known as the "J. W. Thomson Trust."

The annual dinner, held at the Hotel Cecil in April last, was presided over by Sir J. Whittaker Ellis, Bart., and resulted in a handsome subscription list of £635. Your Committee owe a great debt of gratitude to Sir J. W. Ellis for his very able advocacy of the objects of the fund, and tender him their most hearty thanks.

The best thanks of the Committee are also due to the Treasurer, N. Sherwood, Esq., for the warm interest he takes in the fund, and his faithful discharge of the duties of the office he holds; also to their Auditors, Mr. M. Rowan and Mr. P. R. Barr, for their labours in auditing the accounts. The retiring Auditor is Mr. M. Rowan, who is nominated for re-election.

The Committee have to deplore the loss by death of Dr. Robert Hogg, one of the Vice-Presidents from the commencement of the charity; and also of an able colleague, Mr. W. G. Head, an active supporter of the Fund, and so long associated with the Crystal Palace at Sydenham. Mr. G. H. Cuthbert, of Southgate, has been elected in his stead.

The members of the Executive Committee, who retire by rotation, are Messrs. Assbee, Ballantine, Cannell, Cummins, Gordon, Roupell, and Wynne, all of whom offer themselves for re-election, with the exception of Messrs. Ballantine and Cannell, who retire, Mr. A. Outram and Mr. G. H. Richards being nominated to succeed them. Mr. A. F. Barron is again nominated as Secretary, at the same remuneration.

THE FRIENDLY SUPPER.

This was laid for 6.30 in an adjoining room. Mr. P. C. M. Veitch had been announced to take the chair, but was prevented by illness from doing so. N. N. Sherwood, Esq., therefore acted in that capacity, and a very enjoyable evening was spent.

After the usual loyal toasts had been honoured at the Chairman's invitation Mr. Sherwood gave the toast of the evening—"Continued Success and Prosperity to the Gardeners' Royal Orphan Fund." In the course of an interesting speech he urged upon his audience the advisability of interesting as many gardeners as possible in the "Fund," and assured them of the readiness of the members of the nursery and seed trade to do all that lay in their power to help and further the interests of the same. In referring to the donations that had been made to the charity during the year, he spoke of £31 sent by Mr. M. Todd of Edinburgh, which had been received since the publication of the report, which had therefore not appeared in it. He coupled with the toast the name of Mr. W. Marshall. The latter gentleman suitably responded.

The programme also included toasts to the Chairman from Mr. W. Marshall, and to the Secretary, Mr. A. F. Barron, at the instance of the Chairman.

CASH STATEMENT FOR THE YEAR ENDING DECEMBER 31st, 1897.

RECEIPTS.				£	s.	d.
To Balance from last Account ...	...	...	...	599	11	10
„ Subscriptions, General ...	...	...	£280	9	0	
„ Ditto, Collected by Local Secs. ...	...	...	69	2	0	
				349	11	0
„ Donations (including proceeds of Sales of Flowers, Boxes, Entertainments, &c.)... ..	...	...	211	5	9	
„ Ditto, Collected by Local Secs. ...	...	...	51	11	8	
				262	17	5
„ The J. W. Thomson Trust... ..	...	...	457	5	11	
„ The Emma Sherwood Memorial ...	...	...	18	0	0	
„ Annual Dinner ...	...	...	635	6	0	
„ Card Collection ...	...	...	33	8	2	
„ Advertisements in List of Subscribers ...	...	...	26	19	0	
„ Dividends on Stock and Interest on Deposit ...	...	...	247	1	9	
				£2625	1	1

NOTE:—INVESTMENTS

2½% Consols ...	...	...	£7070	6	10
3% Canada Stock ...	...	...	2422	7	4
			£9492	14	2

EXPENDITURE.				£	s.	d.
By Allowances to Orphans ...	...	...	£853	15	0	
„ Emma Sherwood Memorial... ..	...	...	13	0	0	
„ Grants in Aid... ..	...	...	22	10	0	
				889	5	0
„ Annual Dinner ...	...	...	...	126	9	2
„ Secretary's Salary ...	...	...	...	105	0	0
„ Printing and Posting Subscribers' Lists ...	...	...	...	31	4	6
„ Collecting Cards ...	...	...	...	11	13	4
„ Printing and Stationery ...	...	...	25	14	3	
„ Annual, General, and Committee Meetings ...	...	...	9	16	2	
„ Postages ...	...	...	13	10	1	
„ Bank Charges ...	...	...	2	7	1	
„ Sundry Expenses (Petty Cash) ...	...	...	16	18	4	
				68	5	11
„ Purchase of £422 7s. 4d. 3% Canada Stock ...	...	...	457	5	11	
„ Balance:						
Cash at Bank ...	...	...	835	14	3	
Cash in Hand ...	...	...	0	3	0	
Cash on Deposit ...	...	...	100	0	0	
				935	17	3
				£2625	1	1

Having inspected the Securities and Examined the Books and Vouchers supplied to us, we hereby certify the above Account to be correct.

(Signed) P. RUDOLPH BARR, } Auditors.
M. ROWAN.

Dated January 22nd, 1898.



PRUNING ROSES.

EVERYBODY is asking what is to be done about the Roses this season ; and, indeed, it is somewhat difficult to say. Our climate has almost been outdoing itself. "None but himself could be his parallel." Last January is said to need 100 years to show its like, and this month is almost as unseasonably mild. It would be an advantage if one of the authorities—say, any early and a late pruner—would say what they are doing this year, and why.

I have now been released so long from the grave responsibilities of pruning show Roses, that I am rather out of court, and am inclined in this, as many other things, to "follow Nature." The season calls for early pruning—well, then it shall have it. My experience has been that it does not matter very much ; the Roses come into flower much the same time, pruned anywhere between the middle of February and the middle of March. They can hardly help bleeding, I think, somewhat this season.

I have also been adopting the fashion, which now prevails in happy gardens where exhibition blooms are not absolute, of bending over a very big shoot instead of cutting it away. The result is great addition to the quantity, if not in quality of flowers. How such will turn out this season it is hard to imagine. Already with some of mine very nearly all the buds seem to be starting. My rule has always been the last week in February for pruning H.P.'s, and the last week in March for Teas, with H. T.'s possibly between the two. But really this season discounts all preconceptions.—A. C.

[With branches in their natural position the lower buds remain longer dormant than when the stems are bent or pegged down. Is it not desirable to keep the basal buds quiet yet awhile by deferring close pruning, that would force them into growth? We hope to shortly publish further notes on pruning, that may be useful to some readers.]

GARDEN ROSES.

THE fact that Lord Penzance has discontinued the prize that he has for the last three years offered at the Metropolitan Show of the N.R.S. for garden Roses, on the ground of so little interest being taken in them, was suggestive, and instead of damping the ardour of those who wish to encourage their growth should lead to more earnest exertions to extend it. But one or two things have to be taken note of ; those which Lord Penzance wished most to encourage were such as few amateurs, I think, care to take much trouble about. He was anxious that more attention should be paid to the Gallicas, Hybrid Bourbons, and Hybrid Chinas. Now anyone who has seen the stands set up for the prizes for garden Roses knows how few of these appear amongst them, and the truth is they are nearly all out of bloom in the Midlands and South of England before the date of our show. Another reason, I think, is that there are no Roses amongst them, or hardly any, of which we have not as good amongst the H.P.'s, with the advantage that we may get a second bloom from our plants, while in the case of the former we never see one after the flush of bloom in June is over.

We never see, for instance, in our stands of prize blooms such Roses as Juno, Paul Perras, Paul Ricaut, and others, which before the introduction of the Hybrid Perpetual Roses were the joy and pride of our gardens. What grand varieties they are for pot culture! Even now there lingers in one's memory the magnificent plants which Messrs. Paul and Son of Cheshunt and Waltham Cross, and Mr. Turner of Slough, used to bring to the great exhibitions of the Crystal Palace, and which almost took away the breath of the French Rose growers when they saw them at the great exhibition held at South Kensington. It is true they were rather formal in appearance, but they were magnificent examples of cultural skill.

These summer Roses might be comprised under the heads of Provence Roses (under which might be included the Mosses), the Gallicas, Hybrid Chinas, and Hybrid Bourbons, but there is oftentimes a difficulty in accurately fixing the positions of some, so ready are they to hybridise and partake of the characters of the various divisions. There are many delightful variations which became permanent occupants of our gardens. What great favourites, for instance, were the various Moss Roses? Then there was the fine old Cabbage Rose with its delicious perfume, and the favourite of our cottage gardens all through the south of England. Then, again, how dear to some of us are the dwarf and sweet-scented varieties which some way or other were produced amongst them, Rose de Meaux, Spong, Burgundy ; and amongst these summer Roses we also find our best striped Roses. Gloria Mundi or Village Maid is one of the clearest and brightest of these, and though it is often called York and Lancaster, that name properly belongs to quite a different Rose. I remember some years ago when good prizes were offered for a box of York and Lancaster that several stands were exhibited, but not one of them contained the true variety, but all Gloria Mundi. We have had striped Roses among H.P.'s, but I do not care for Pride of Reigate, and Merrie England, a sport from Heinrich Schultheis, has not been sufficiently tried as to its remaining constant in its striped character.

Now it is amongst these summer flowering Roses that we are to look for the old favourites of our gardens which people called "dear old-fashioned Roses," and no attempt seems to have been made except by

Lord Penzance to obtain any improvement amongst them. Moreover, I have gone through a great many Rose gardens, and some where garden Roses were made a feature, but these varieties, with a few exceptions, were conspicuous by their absence. I am writing of course only of amateurs ; some traders may grow them to meet any possible wants of customers, but I rather imagine that the demand is very small. I frequently hear how great is the demand for garden Roses, but it is not for such Roses as these but for small growing Teas and Noisettes, Polyanthas, single Roses, and Hybrid Sweet Briars, that the inquiries are made, and in these classes many additions have been made of late years. This is well, and English gardens will be the richer for their encouragement.

The whole matter resolves itself into this : Is it desirable to encourage the preservation of these summer-flowering Roses? and if so, in what way is encouragement to be given? This can only be, I think, by making a separate class for them, for if the class be for garden Roses it will inevitably come to pass that these will be to a great extent excluded, and the stands filled with the classes which I have mentioned above. Should this question be answered in the affirmative I think it will be desirable that prizes be offered for them—not at the Metropolitan Show, where they are nearly all over, but at the Southern Provincial Show, which will be this year held at Bath, and will be ten days earlier than the Metropolitan Show. I have alluded only to the shows of the N.R.S., because if there be any more to be made in this direction it ought to emanate from that body. I have thrown out these hints for the due consideration of its members, and hope that others who are able to deal more practically with the subject than I am, owing to the smallness of my garden, will give their views on the subject.—D., Deal.

SEASONABLE WORK.

OWING to mild weather and a fair amount of sunshine Roses under glass are coming on rapidly. It is therefore necessary to be on the look out for insect foes, more especially the green fly, which is sure to be in abundance immediately new growth commences. It is not difficult to kill this insect, but even if we apparently kill the whole of those in the house, others soon make their appearance. The secret of success in battling against this foe is to tackle it early, and continue the attack in a mild way. This is far more effectual than waiting for a multitude of insects, and then adopting extreme measures for their destruction. A free use of the syringe, with a very weak insecticide, will have great effect in keeping them down, while it will also stop thrips and red spider. Roses do not approve of a dry and parching atmosphere, nor one that is heavily charged with moisture. They enjoy a midway course between these ; and by using the syringe in the way I have described we give the needed moisture, and check insects at the same time.

I have heard more than one gardener say his Rose house was free of insect foes, but I never yet failed to find some, and often several he was not acquainted with. In my opinion growing Roses—in any quantity, not an individual plant or two—are never absolutely free of insects. But we can keep them within bounds, so that they do very little injury to the plants. And as the strongest measures will not completely eradicate them, while they will most certainly injure our plants, I would earnestly advise that very mild measures be applied more frequently in the way of preventives.

As the plants progress a slight rise in temperature may be given, especially at night. Weak liquid manures are valuable to growing plants, and none more so than the drainings from a cow stall. Artificial manures are good in many cases, but they seldom feed the foliage in the same way as natural manures do. Do not give liquid manure to a very dry plant, and if you use it weak and often it will be of greater help than a strong dose once a week.

A house of Roses growing healthfully and clean is a pleasant sight to anyone, even when the plants are without flowers ; but plants infested with insects or the wood breaking irregularly cannot please. It is necessary to have well-matured wood to start with, a suitable compost, and very steady treatment at first. Where either of these is missing we are sure to find it a difficult matter to secure anything approaching a satisfactory result.

Ventilation needs considerable care and judgment. I would not ventilate at all at this time of the year unless absolutely forced to do so through a spell of bright sunshine after the house was already heated to the desired temperature. A slight damping down of the walls and walks will be found a great help at such times. Where the plants are in pots it is well to go over them, and slightly stir the surface soil once a fortnight. It does not take long to do a good number of plants, and if they are turned round at the same time it is astonishing what progress they make. Besides, when in such close contact with the plant we are able to note if the soil is in proper condition as regards moisture. A plant amongst several others may often be dry or sodden, the fact not being easily discovered when giving water to the bulk. A very little water will keep the surface moist, and only great experience can enable one to be certain from a rapid glance only.

A thoroughly good soaking of liquid manure, rather strong, may now be given to most Roses established in borders, and commencing growth. It is also well to see that young growths of Maréchal Niel, and others upon the roof, do not touch the glass. A sharp frost will freeze them to it, and generally do much damage, often being the main cause of blind or flowerless shoots.

In the open ground we shall soon be busy pruning, and a few notes would seem seasonable. First of all bear in mind what you are pruning for ; whether for a few exhibition blooms, or a quantity of flowers. You cannot have a large number of good exhibition flowers upon the same

plant at the same time. I am not now alluding to such as the so-called garden Roses, which are best fitted for show purposes when grown naturally, but those of the three chief classes, H.P., H.T., and Teas, which we see in such grand form at the best Rose shows.

If you wish for quantity, at the expense of quality, quite double the amount of wood should be left. Most of us prune too early—too much upon a given line, without due regard to the peculiarities of individual varieties, independent of the class or section to which they may belong, and which can only come from long experience. I fear that to go fully into this matter would occupy too much space at present, but may refer to it again: in the meantime pass to another point.

All budded Briars and other Rose stocks, whether standards or dwarfs, should be cut off to within an inch or so of the bud as soon as possible now. Many of ours are already done. This is distinct from pruning. From now onwards, watch for and cut out all eyes which are below the Rose bud, and which would form injurious suckers. It is not too late to plant yet: but, unless under exceptional circumstances, all planting should have been done ere this, seeing what a favourable season we have had. I do not remember a better, nor one so prolonged. Do not be disappointed if, through late ordering, you are supplied with small plants. They are far the best when well ripened and healthy, and more often than not thrive much better than those of double and treble the size. So long as they have a few sound eyes near the base, these suffice. The larger ones are cut down to practically the same level when pruning, and do not, as a rule, have such fibrous and valuable roots.—PRACTICE.

CURRENT TOPICS.

THE MILDNESS OF THE SEASON.

My few remarks on page 601 of your issue of 23rd December last, concerning indications of prospective mildness of the winter, have become of even more interesting import since. It seems there is a clearly established analogy in the weather over a great breadth in Europe, at least since the early autumn. In the corn-growing interior of Russia a considerable amount of drought has wrought havoc to autumn seed beds, and we read since of a light black frost in those regions. Thus, comparatively, the absence of rain or snow over an important extent of latitude correlates with the observations of a retrocession of ice (previously mentioned) as reported from the Arctic by all the returning shipping during the autumn, beyond previous experience. We also read from Bødø in Norway, within the Arctic Circle, under date of 20th January, that sleighing has been possible on only two days this winter. The relative absence of snow, and hence of cold, goes hand in hand with that of rain, and intensifies the possible primary cause for the actually experienced mildness. In trying to reconcile symptoms converging on the general mildness of the European winter with the opposite result that should exist elsewhere, we read recently of a terrific blizzard in the United States having affected half of its enormous area—a possible result of accumulation of Arctic ice in the northern regions of that exposed continent, that is unblest by a mountain barrier across its stupendous breadth to repel Arctic influences. All those interested to look beyond the mere fact of a phenomenal mildness might recognise with me the solution, or part of it, in the condition of things described. It might lead to further useful inquiries. Among messengers of spring I may mention, not having noticed their advent mentioned elsewhere, that I saw several frogs hopping about my garden in January.

CENTAUREA CANDIDISSIMA.

Seeing the remarks (on page 132) as to this plant not being found the easiest to propagate, my old plan of placing cuttings singly in thumbs might be acceptable. The very loosely adhering, delicate rootlets, singular in their being of the frosted tint of the foliage, are easily detached on potting off a batch from a 6-inch pot. Short leafstalks being only allowed of 3 or 4 inches length above the silver sand, is a safeguard against damping off. In the ease of your correspondent there was the drawback of a Box-edging a foot high next to the line of Centaurea and "Geranium" inside, a combination which does not improve the quality of cuttings taken from that shady depth close to the ground level, as necessitated by the habit of the plant. Its supreme effect is undoubted, as no other plant of similar boldness and neatness attains such tint. If I had only a few beds to provide for in a garden, I should not like to be without one having the Centaurea as an edging, with *Coleus Verschaffelti* for the centre. The splendid transparent claret colour produced by a glimpse across the bed, with the sun in opposition, is not easily excelled. I have found it a good plan to place a few spare plants of Centaurea singly 2 feet apart on some spare place in the full sun to provide the best cuttings.

[We have always found isolated plants give the best offsets, and, by the method indicated, have had no difficulty in raising the number of plants required. Plants are easily raised from seed.]

HALL FOR HORTICULTURE.

It was very opportune on the part of the Chairman of the Royal Horticultural Society, Sir Trevor Lawrence, to bestow a graceful thought on this project on the occasion of the annual meeting of this Society. I am afraid, however, the allusion appeared to himself somewhat mirthful rather than meant for business, when he hinted at members doubling their subscriptions towards carrying out the project of the Hall. The flourishing condition of the finances of the Society and the heavily increasing numbers seeking membership might perhaps have furnished an excuse for his frame of mind. All thoughtful members, however, should lay to heart

such a plan as a very small step indeed towards the practical realisation of the object of securing a site, on the Thames Embankment by preference, and magnanimously disposed citizens might yet have a word to say on seeing a serious effort making in the creation of a fund for building the Hall. I ventilated this matter in your issues of 23rd December last and 13th January, on pages 606 and 32 of your publication, and had hoped that some voices might have been raised in favour of supporting such a plan on the part of the various floricultural societies who would agree to this common centre. However, there is always time for "those to be helped who help themselves," and this latter movement, I think, might well be supported by the Council of the R.H.S., who would take any steps they deemed advisable to that end with the least loss of time, and with the best results if done with the necessary emphasis.

The publications issued by the Society under the able conduct of the Rev. W. Wilks, the Secretary, whose own records with other reviews of plant life are swelling into the importance of a small library by themselves, are alone worth that annual guinea mostly subscribed for membership. The annual exhibitions at the Temple flower shows have reached their climax of excellence in this country, and that is saying in the world, and who would not consider the privilege of inspection, from an educational point of view, cheaply bought at another guinea, especially with the Crystal Palace Show thrown in, as well as the Drill Hall meetings of the year? The Show at the Temple has become the true national arena of our great horticulturists, and no British grower aiming at leadership likes to be unrepresented there. These interesting meetings at the Drill Hall, of which there are eighteen annually, are becoming very fair flower shows in themselves, and they would be surely doubled or trebled within a few years from entering upon enlarged premises in the future Hall of Horticulture.

Large nurserymen should not be reluctant to admit their increased prospects by such extension. The fortnightly displays would become immeasurably more important if placed prominently on the Thames Embankment, especially with music added for an hour in the afternoon. The floricultural societies and a little music might assist each other effectually. A great impetus would be given to horticulture by the change suggested. A capacious hall is actually needed by the R.H.S. by reason of the increasing membership and the increased demand for space at the meetings.

Strike the iron while it is hot, and while favourable words are fresh from a multitude of articles that have appeared in print. There is the Chrysanthemum Society thirsting for fresh quarters. All that is wanted is the clear intimation of such a centre to become a reality, for an overwhelming number of members of that Society to be ready to embrace the opportunity. Of course it would only be fair that all the Societies ready to join should adopt the same plan as suggested, for the R.H.S. to address a formal proposal to their members to double their subscriptions for the said purpose. About £5000 should be raised by the combined Societies. When this is done there seems little doubt that wealthy friends of the highest and purest cultural embodiment of earthly refinement will not allow the attainment of our most desirable project to languish.

PLANTS AND GROUPING.

I have attempted to protest against scentless Roses and coarse developments, mainly for size only, in such favourite plants as Chrysanthemums, double tuberous Begonias, and similar forms, and should include monstrous Caladiums as exhibited of late years as a direction of taste to be deprecated. It may, therefore, not be amiss to allude from a similar point of view to the class of plants of so much attraction when in flower, and of so much intrinsic value—viz., Orchids. Nothing seems, perhaps, more justified than the admission that where for the gratification of our senses so much extreme beauty as Orchids in flower possess is produced, there should be, from the eternal laws of an even balance in all things, an equilibrium result from their retreat when out of flower into a state of most grotesque ugliness. Its inherent unmitigated dejection must depress our spirits as would the sight of a fleet of derelicts.

But as all horticulture is only another expression for a judicious assistance of Nature, why should not this opprobrium attaching during three parts of their existence be removed? A mere trifle is needed, perhaps only to be thought of in some cases, in order to be made available. Natural associations will do it. Even in their flowering state Orchids would be much more attractive in more natural surroundings than are provided by a group of them unassisted, or too scantily assisted, by any neutral feature to be provided in accordance with the particular flowering habit of each class. I am referring only to plants as grown in private establishments.

Plants to be used for association should be very accommodating and maintained in their perfect condition under treatment as required by any particular class of Orchids. When out of flower Orchid plants would retreat out of notice among characteristic natural surroundings and associations of continuous attractive features. Moderate-sized foliage plants, especially graceful kinds such as *Cocos Weddelliana* and *Geonoma gracilis* among Palms, or *Aralias*, *Eulalia japonica variegata* mixed with a few bolder features like *Begonia Rex*, *Marantas*, and *Dracenas*, or with Ferns and *Selaginellas*, an occasional re-grouping would provide an opportunity for the display of taste by gardeners, deficiencies in which might be thus improved upon.

As to Ferns and *Selaginellas*, conventional pots should be used in a minority, although they would do for *Neottopteris* and *Lomarias*, not to forget *Adiantums* and similarly constituted classes. But I should like to draw attention principally in this connection to *Davallias* lending themselves for considerable effect, but not in pots in the usual way. From

bundles of Spanish cork Oak bark should be selected, such, not infrequent, growths that form a complete length of stem (minus the timber). If these lengths, of about 4 to 8 inches in diameter, were inserted in pots several inches wider, there would be room near the edge of the pot for rooted portions of *Davallias* that would within a few years cover naturally the cork, and with unusual effect if judiciously guided and tied round with raffia until rooted to the cork. I recommend this style of easy training for much more general use. It should be made a feature in every greenhouse and stove, when *Davallias* would promptly become favourites, for these plants thus formed would be a most desirable change among table decorations. The most perfect distribution of fronds thus produced can hardly be appreciated unless seen, and that the excellence of the picture should be so striking a feature is, I think, mostly unsuspected.

Hardly anyone seeing *Davallias* crouching on level surfaces of pots or pans, or bundled up in suspended baskets, thickly rooted, with hardly one frond seen to advantage, because on all sides overlapped, can conceive what a revelation a perfectly grown short cone of about 18 to 24 inches high would be. A single basket of *Davallia Tyermanni* appeared among a group of plants at the last Drill Hall meeting. The basket was crowded with roots and fronds, and all effect was lost. If such a mass were pulled in pieces and divided among, say, four or five 8-inch pots, with a complete piece of cork branch inserted, and carefully trained for a year or two, the operator would be surprised at the difference. The sight of such objects of beauty would suffice to sell them promptly, whereas nobody would look at the basket.

I select this variety, *D. Tyermanni*, in order to accentuate that its effect is the most striking of all *Davallias* (the otherwise popular *Hare's Foot*), mostly applied to *D. canariensis*, from the contrast in tints between the fronds, bark, and rhizomes. *D. Mariesi* would even cover the bark more promptly, and also the lovely *D. fijiensis* would mark a further phase in public favour were it only treated with the respect and patience to arrive at the results pointed out. There are some three dozen varieties of *Davallias* to select from, but other classes would do, including particularly our common hardy *Polypody*, a class name, covering also the striking *Polypodium appendiculare*, with its dark rich veins on every portion of its fronds, which would be something to look at for Orchid lovers, and to hide their derelicts. I need hardly insist on a change through *Adiantums*, but should like to name *Farleyense* and *Williamsi*, the latter the most perfectly formed frond among *Adiantums*, its attraction consisting in its lightness, unconfused.

As the grouping of plants usually seen at the Drill Hall there seems little in it to recommend the style. You usually see a confused mass of plants, one jostling the other, of nearly equal height, and hardly one of them showing the true merits of any one plant. I should like to see an arrangement of common *Selaginella* established in pans and well developed for the groundwork, with spaces provided for specially attractive foliage or other plants, allowing each to have justice done it and seen thoroughly. The effect of such a group on the *Selaginella* would probably be appreciated on all sides. Of course the *Selaginella* would have to be grown consistently so as to show a natural even surface, and the plants interposed to show no intrusive pots.—H. H. R., *Forest Hill*.

THE YOUNG GARDENERS' DOMAIN.

THE TUBEROUS BEGONIA.

In a previous article I treated on the Begonia for bedding purposes, and will now give a few notes on the culture in pots. Where tubers are in stock they should be examined forthwith, and if any have started into growth they must be potted at once, using good fibrous loam and leaf soil in equal parts, with plenty of sand. The size of pots should be determined by considering the after treatment and the size of the tubers. I prefer to pot them at once in the pots in which they are to flower, the largest tubers being grown in 9-inch pots, and by this method they give entire satisfaction. More than usual care must be given to drainage, for when growing freely they will require abundance of water, which must pass away quickly to prevent the soil getting sour.

A third of the remaining tubers ought to be laid in seed boxes full of leaf mould, and kept moist in an intermediate house until they have become well rooted and made an inch or more of growth. The large tubers can be divided, leaving a growth to each half and dressing the wounds with powdered charcoal. Keep them close and shaded after potting until growing freely, when more air will be required. It is a great mistake to force the Begonia unduly at any period, especially during the early stages of growth. Neat stakes to support the growths and blooms will be necessary. They are charming when arranged with *Adiantum cuneatum*, and the temperature and shade required for the latter suits them admirably. The remaining tubers should be grown in successions, and with good treatment they will be gay with flowers until late in the autumn.

Clear soot water alternately with artificial manures is beneficial to them when the pots are full of roots, but care should be taken not to give either manures too strong, the roots being easily injured.—NIL DESPERANDUM.

REJUVENATION OF OLD PEAR TREES ON WALLS.

THE season for nailing is almost over as regards Pears, and soon those on walls will be in bloom. In most gardens there are to be found some old trees which apparently have had their day, and although they do not look worn out their crops are unsatisfactory, the fruit inclined to be undersized and gritty, not worth putting upon the dessert table. Many

of these trees may be rejuvenated and turned to good account in a short time by cutting back the branches close to the stem, and allowing an entirely fresh start to be made. First of all, it is advisable to attend to the roots. If in old gravelly soil which has not had a chance of being manured and worked properly, they should be subjected to a good root-pruning and put in suitable loam, taking care to add a fair amount of wood ash and lime rubble, with decayed cow manure amongst them.

This operation should take place a season before the one in which the branches are to be cut back, as it gives the tree a chance to establish itself firmly again, and be ready for prompt root action when most necessary. Perhaps the month of February is the best time to take off the branches, and this should be done properly, no half measures. Cut back right to the stem until it resembles a clean bare post, and leave no stumps or snags. At this stage of the proceeding opportunity should be taken to cleanse it properly if at all troubled with insects or scale, and I know of no more reliable compost for the purpose than slaked quicklime and soot mixed, and applied with a brush into all crevices of the bark and all over the bole.

The buds will push out plentifully, three or four from each old branch base, and then it is simply a matter of taking the best in the nearest position for training, removing the others. In two or three seasons the trees will be fairly started again, clean and strong, ready to bear first-rate fruit as a young tree. The varieties I have seen most successfully treated

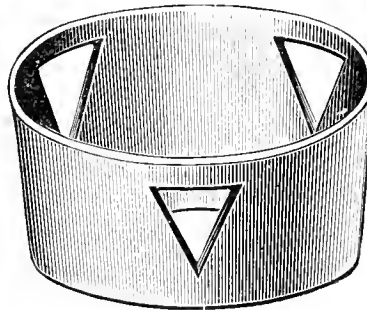


Fig. 27.

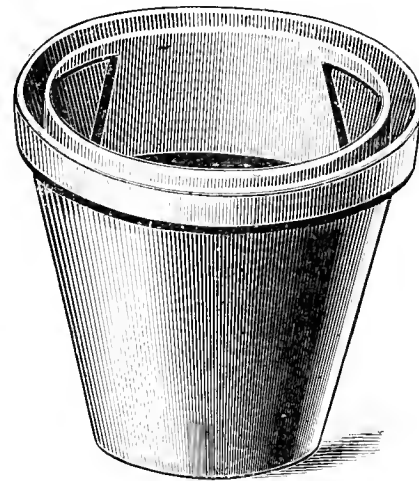


Fig. 28.

WEST'S PATENT POT RIM. (See page 164.)

by the above method were Marie Louise and Easter Beurré. Both bore good, clean fruit the third season, and were upwards of twenty-four years old when the work of rejuvenation commenced.—R. A. ANDERSON, *Alnwick Castle Gardens*.

COVERING WALLS AND PILLARS.

AS we travel about visiting places and gardens one cannot help noticing a number of bare walls, pillars and outhouses, which might be made objects of beauty by the aid of flowering or evergreen climbing plants.

IVY will only be given a passing word, as it is so familiar to everybody that it needs no comment from me. It will thrive almost anywhere, and being evergreen, always looks well, especially the variegated forms. To keep it in trim it should be cut back close to the wall each year in the month of March or April.

AMPELOPSIS VEITCHI is an excellent hardy climber, and when once planted will require very little attention, as by nature it clings tightly to the wall and requires considerable force to detach it when necessary. It grows quickly, and for autumnal beauty is, in my opinion, scarcely equalled by anything we have; certainly not excelled. The leaves of this variety are much sought after for dessert dishes and table decoration.

AMPELOPSIS HEDERACEA is a close ally of the foregoing, differing from it in habit, also size and shape of leaf. It is best adapted for covering lofty pillars and verandahs. The main branches should be secured by means of wire trellises attached to the pillars or to the verandah by the use of nails and shreds, pruning being done much on the same lines as that practised on the Grape Vine.

WISTARIA SINENSIS is a grand deciduous tree, and produces its racemes of sweet-scented, pale blue flowers in the months of April and May in the south of England, and occasionally flowering again during August. The white variety is very charming. Pruning may be done as with *Ampelopsis hederacea*.

ROSES are excellent for our purpose, and their fragrance is always refreshing after the toil of a hot summer's day. That grand old Rose Gloire de Dijon must still be included in a good list, although it is apt to become bare towards the base as it increases in age. Banksian Roses are very attractive, and should be in every southern garden. Other excellent and well-tried varieties are W. A. Richardson, Rêve d'Or, Boule d'Or, and L'Idéal.

CLEMATISES are excellent climbers and bloom profusely. Two plants of the Jackmanni section, alba and Duke of Edinburgh, adorned the verandah of a vicarage I am acquainted with, and the vicar's wife attended to them herself with fostering care, the gardener not being allowed to touch them. Clematis indivisa lobata is a deciduous climber, and produces its flowers on the wood of the previous season's growth.

CRATÆGUS PYRACANTHA is an evergreen hardy shrub, and produces large bunches of bright red berries in midwinter; it is, in fact, one of the best berried plants for winter work that we possess. It requires support in the shape of nails and shreds neatly applied.

COTONEASTER MICROPHYLLA is even better than the foregoing for thickly covering a wall. It is perfectly hardy and produces small white flowers singly during summer, followed by small red fruits in the autumn, and remaining through the winter. Of these berries the birds are very fond, especially the yellowhammer. The plant requires support like the foregoing.

LATHYRUS.—Several species of this, the Pea family, are useful for pillars, but may be objectionable to some on account of their habit of dying down to the ground in the autumn.

JASMINUMS are good climbers. The yellow *J. nudiflorum* is in bloom with us now, and is quite attractive at this dull season.

PIRUS.—Amongst these may well be included as wall plants *P. japonica*; it is very beautiful just now with its masses of bright red flowers. Habit deciduous.

SWAINSONIA GALEGIFOLIA is good for pillars, but is deciduous. It flowers profusely during the summer months, the colour of the flowers being purple red.

MAGNOLIAS are excellent for large walls. *M. grandiflora* is an evergreen; flowers creamy white, very sweet scented, and about a foot in diameter. *M. Soulangeana* is a deciduous hybrid, and produces purple white flowers in great profusion during April.

CEANOTHUS.—*C. azureus* bears profusely large racemes of light blue flowers, which not only look beautiful on the plant, but are useful also for cutting purposes. This variety being only half-hardy, should be assigned a position on a low south wall. It requires nailing as does a Rose.

HONEYSUCKLES ought not to be forgotten, the Scarlet Trumpet (*Lonicera sempervirens*) being especially good and floriferous. All the above may be purchased from a good nurseryman at any time of the year in pots, and anyone contemplating planting should do the work at once. They will succeed well in fibrous loam, with a fourth part of good leaf mould added.—T. P.

[Is *Swainsonia galegifolia* generally accepted as hardy? It is a recognised greenhouse or conservatory plant, and *Clematis indivisa* is usually grown under glass, producing a charming effect in conservatories.]



HARDY FRUIT GARDEN.

Improving Fruit Trees.—Fruit trees are always capable of improvement when the branches are crowded together, unduly contorted in shape, or grow into each other from opposite directions. The results following negligence in this respect are to be seen in fruitless branches, loss of vigour, and ultimately accumulations of worn out spurs and dead wood.

Standard Trees.—To effect permanent improvement with standard fruit trees, the first essential is that each individual tree has ample space allowed it all round. It should stand at least 20 feet apart from other standard trees, no matter what its age or size. Fully grown trees require all the air, light, and space possible, and young trees in the process of development need the above conditions just the same to assist their extension. This is frequently lost sight of. Trees are planted closer than they ought to be in the first instance, and are not allowed to be removed in time for preventing their injuring one another. This can be rectified to some extent, but never so well as when the trees are beginning to touch. The next step is to thin out the branches. Do not hesitate to allow each plenty of room, but where there is much pruning required it may not be wise to carry it all out in one season. Some branches might be removed in summer and the rest the following winter, a preliminary clearance being carried out now as a commencement. Thinning out, not shortening, is the principle to follow in pruning standards.

Pyramids and Bushes.—The trees individually are not so frequently crowded, but the branches are often found to be inconveniently numerous. When this is the case the number ought by all means to be judiciously reduced. The continual cutting back of wood to form spurs causes these to be crowded and elongated, hence it is desirable that some reduction and thinning of them should take place. Weakly spurs are best dispensed with if possible. They produce leaves, which may shade those attached to better spurs. Dead growths and spurs are usually the result of overcrowding, and in renovating trees every portion ought to be cut out. Furcation of the branches may cause crowding. When this is so, cut out the least desirable, having, as far as possible, each branch a simple cordon.

Wall Trees.—The tendency to crowd the branches of wall fruit trees when young leads to disastrous results later. The branches of Apples, Pears, Plums, and Cherries which are spur-pruned ought not to be less than a foot apart. Some that grow strongly may be wider apart, especially on low walls. The most vigorous growth takes place on the upper branches, and strict attention must be given not to allow them to become unduly furnished with long spurs, that will shade those below them.

Furnishing Fruit Walls.—The most suitable fruit trees for furnishing walls of various aspects is often a matter of importance. Apricots, Peaches and Nectarines ought to have the best positions on south walls which are high enough to permit of free extension. South aspects being the sunniest and warmest enables the fruit to be brought to perfection, as well as thoroughly ripening the wood. Choice Apples, Pears and Plums may also have similar aspects, other varieties of these fruits having a western wall. East walls may also be devoted to hardy Plums, Pears, cordon Gooseberries and Red Currants, while north walls may be planted with Morello Cherries, cordon Gooseberries, and Currants.

Pruning Gooseberries.—When Gooseberry pruning has been left over on account of birds attacking the buds the bushes ought now to be dealt with. The severe pruning practised by some is not advisable where much damage is done by birds. Fruit is produced freely on young wood of the previous year, therefore all that is necessary is to leave a fair amount of the best placed shoots all over the trees. Shoots which it is necessary to cut out situated on the older branches may be shortened back to a few buds forming short fruit spurs. Cut out growths descending to the ground, or any that crowd or destroy the shape of trees. Dustings of soot or lime will prevent the buds remaining being attacked until they break into growth, when they are safe.

Pruning Currants.—Red and White Currants should also be pruned. Like Gooseberries, they suffer from bird attacks if not protected. With these Currants spur-pruning is a necessity, each main branch having all the side shoots shortened closely back to the small spur growths or buds clustered at the base, cutting to within half an inch of the origin of each shoot. Should the leading branch require to be extended in length the shoot forming the leader must be shortened to a length of 6 to 9 inches. Adopt the same plan in the case of young trees, thus gradually extending the branches to their desired length. Strong growths near the base may be utilised, if necessary, for forming new branches to take the place of any worn out.

The pruning of Black Currants is not usually deferred, as the buds are not so subject to damage. Bushes, however, which do need pruning now are best thinned out, leaving vigorous young growths for furnishing and forming shapely bushes, and to produce fruit.

FRUIT FORCING.

Pines.—*Plants Starting into Fruit*.—Those selected about the beginning of last December, and started by an advanced temperature and an increase of moisture, will now be showing fruit, when the temperature may be maintained at 65° to 70° at night, and 75° to 80° in the daytime under favourable circumstances, ventilating at 80°, allowing an advance to 85° or 90°, and closing so as to maintain that heat from sun influence as much as possible. The plants will require more water at the roots, examining the stock once a week, as with increased light and heat the need for water will be correspondingly greater. Recently started plants to follow those already named should have a night temperature of 65° to 70° by day artificially, which will be sufficient for them for some time longer.

Starting Suckers.—These will have to be started at the commencement of March to give a succession of fruit from next December onwards; therefore, attend to the preparation of the soil for potting, and a fermenting bed in some close structure to generate and maintain a bottom heat of 85° to 95° near the surface, and with means of maintaining a temperature 55° to 65° by fire heat in the atmosphere with regularity.

Vines.—*Early Forced in Pots*.—The Vines must not sustain any check either through dryness at the roots or in the atmosphere. If the roots cannot have the run of fermenting material, place strips of zinc 3 or 4 inches deep round the top of the pots, inserting them just within the rim, and top-dress with rich turfy loam and decayed manure in equal parts, intermixed with a handful of superphosphate to each bushel of loam and decayed manure in equal parts; but with the pots plunged to the rim in fermenting material, strips of turf about 3 inches thick should be laid over the rim so as to form the necessary dish. Keep the Vines well watered with liquid manure a few degrees warmer than the mean of the house, also have the plunging material moist, especially when the roots are allowed to find their way into it from the pots, plenty of active feeders being essential to well-filled berries. Do not, however, keep the soil sodden, but allow it to become fairly dry, then afford a plentiful supply.

To encourage the swelling of the berries keep the laterals below the fruit somewhat closely pinched, but allow those above the bunches more liberty, avoiding overcrowding with foliage that cannot have full exposure to light. Also be careful in thinning the berries and in ventilating, taking care not to brush the Grapes with the hand, and to avoid cold currents, as both cause "rust," hardening the epidermis, so that the berries do not afterwards swell freely, and in some cases cracking results. Ventilate early in the day, affording a little air at 70°, increasing it with the sun heat to 85°, and closing early so as to secure a temperature of 85° to 90°. Keep a sharp look out for red spider, and let the first specks on the leaves be promptly sponged with weak softsoap and water. An ammoniated atmosphere has a good effect on red spider, the best being that of stable drainings, diluted, when neat, with about five parts water, using about a gallon to 10 square yards of paths and walls. Painting the hot-water pipes with sulphur brought to the consistency of thin cream with skim milk is an antidote to red spider and mildew, but the pipes must only be lightly coated, and not heated much over 170°.

Early Forced Planted-out Vines.—Houses closed in November, and the Vines started early in December, will need to have the berries thinned as soon as set, or not later than when it can be seen which have been properly fertilised by their taking the lead in swelling. Tolerate no

surplus bunches, remove badly set and ill-shaped clusters, seeking a full crop of compact, good shaped, well furnished bunches, properly swelled and perfect in colour and finish, which are more profitable and much more creditable than an enormous crop of large loose clusters of unevenly swelled berries, red in colour, with a large percentage shanked. Allow laterals to extend beyond the fruits where there is room for exposure to light, but in no case must laterals be encouraged to the prejudice of the principal leaves. Attend to stopping frequently, for the alternating accelerations and checks to root action, consequent on encouraging the laterals and then removing them by armfuls, are attended with the worst consequences to foliage and fruit.

Afford a thorough supply of liquid manure to the inside border at intervals as required to keep the soil in a properly moist—never soddened—condition, and mulch with an inch of sweetened horse droppings or rather lumpy well decayed manure. Fresh horse droppings give off too much ammonia, this injuring the foliage when too powerful, especially when the house is kept close in dull periods. Maintain a night temperature of 60° to 65°, 70° to 75° by day, ventilating from 70°, keeping through the day at 80° to 85° with sun, closing so as to maintain this heat, or even 5° more, until well into the afternoon, and well damping the house. Avoid syringing the foliage and fruit, as however clear and soft the water may be, there is danger of sediment; indeed, all may appear clear until the Grapes begin to finish, then the purple or golden hue stained with white is a serious blemish.

Vines in Flower.—The temperature must not be less than 60° to 65° at night and 70° to 75° by day. Lessen or discontinue the syringing, though moderate moisture is desirable for the benefit of the foliage, preventing condensation of moisture by a little ventilation constantly, taking care not to cause a draught. Shy-setting varieties require careful fertilisation, all varieties well repaying the labour by producing finer bunches of evenly formed berries. Afford Muscats in flower a night temperature of 65° to 70°, and 75° to 80° by day; if the bunches are numerous a better set will be secured by the removal of the surplus ones before they bloom. Duplicates only take support from those which are ultimately left for the crop.

Thinning Grapes.—Keep this operation well in hand, thinning Black Hamburgs and other free-setting varieties as soon as possible after flowering; but the shy-setting Muscats and others should be left until the properly fertilised berries can be distinguished. Sufficient berries should be taken out to allow of those left attaining their full size without wedging or crushing, retaining enough to prevent the bunches falling out of shape when cut and laid upon the dish.

Succession Houses.—Attend to disbudding as soon as the best shows for fruit can be discerned, proceeding gradually. Stopping may take place one, two, three, or four joints beyond the show of fruit as the space admits, but the leaves beyond the fruit having exposure to light, the more certain is it of being well supported. If the space is limited stop at the second joint, or even one beyond the bunch, but where space admits stop the growths at the third or fourth joint beyond the bunch, and then allow the laterals to extend until the available space is covered with an even spread of leaves, then keep them closely stopped. Tie the growths down before they touch the glass; bring them down carefully, as the growths of vigorous Vines are liable to snap. Allow plenty of room in the ligatures for the swelling of the shoots. When the bunches show increase the temperature to 55° to 60° at night, 65° by day artificially, 70° to 75° from sun heat, and advance to 80° or 85° from that source, especially after closing.

THE BEE-KEEPER.

STRAW SKEPS.

ALTHOUGH the moveable frame hive has made great headway throughout the country, there are many bee-keepers who adhere to the hive of their forefathers, and will not discard the straw skep in favour of the more modern frame hive. Why this should be the case it is somewhat difficult to say, as one may show them how easily the bees are manipulated in the modern hive and the surplus honey removed without injuring or destroying the bees. Still they will work on the same lines as before, with the exception of destroying the bees, which was invariably done not many years ago.

Bearing in mind the fact that there are more bees kept in straw skeps throughout the country than some people imagine, it may be interesting to them to know the various means at their command of obtaining a surplus. In the first place, it is as well to remember that it is much easier to obtain a large surplus from a frame hive than it is from an ordinary straw skep. This has been the experience of all who have given both systems a fair trial—not only in the extra weight obtained, but also in the superior quality. If, however, close attention is paid to straw skeps, and the bees receive extra room when required, it is surprising the large amount of honey that may be obtained from a strong colony in a favourable season. If a good harvest of honey is expected swarming must not be encouraged, unless the chief source from which the honey is obtained is the Heather. In that case a limited number may be allowed to swarm with advantage, as the aim of bee-keepers should be to have their hives as full as possible of bees when the honey flow comes.

OBTAINING A SURPLUS FROM SKEPS.

If the bulk of the honey is taken from field Beans and white Clover, it is impossible to obtain a satisfactory surplus from stocks that are allowed to swarm indiscriminately, and when once they have the swarming fever, no after management will prevent them. Our experience with first swarms is, they appear to work much harder when placed in their new home, in comparison with those that have not swarmed. But as there would be only a given number of bees in the swarm when they left their parent hive, there would be no increase in numbers for three weeks at the earliest, while a fortnight at the least would have to elapse before the newly hatched bees would be of any use as honey gatherers. By that time many of the old bees would have died off, and unless the swarm were an extra early one, the chances are that the best part of the honey season would be over before they were in a condition to gather and store a surplus. A stock that has not swarmed will continue to increase at a rapid rate. The hundreds of bees that are hatched daily will soon cause the hive to become crowded, and if ample room is provided for the fast increasing colony, the bees will work quite as freely as a first swarm.

A stock treated in this manner will be in good condition for storing a surplus should the weather be favourable when the honey can be obtained. Extra space may be provided for the bees by placing an eke about 4 inches or more in depth under the skep. This may be made out of an old skep the same size as the one under which it is to be placed, and the bees will at once commence to build their combs to within a short distance of the floor board. This should allow sufficient space for the bees in an ordinary skep. If more room is needed, it must be given at the top of the skep, as by this time honey will probably be coming in freely.

SUPERS ON SKEPS.

It is as easy to obtain well-finished sections of comb honey from straw skeps as from the most elaborate frame hive. Some of the best finished sections we have ever seen were worked on the top of a straw skep. All that is necessary is to prepare a crate of sections in the usual manner. The crate containing the sections should be placed inside a box slightly larger, so that there is sufficient space round the sides for packing with some warm material, which will be of great advantage in conserving the warmth. The bottom of the box must have a hole to correspond with the one on the top of the skep. The bees will then be able to pass from one to the other. Care must be taken in placing the box containing the sections on the skep that there is no escape of heat, and there need be no difficulty in this respect with a flat topped skep, as a ring of some warm material may be placed under the box. If the skep is dome-shaped it is better to make a platform of clay, or something similar, on which to place the box, so that it may be quite level. The whole must be covered up warm, and due precaution taken to prevent the interior becoming saturated.

Bell-glasses of various forms can be used as supers, but are not recommended if quantity is required. These may be fixed on a level stage similar to the crate of sections. An empty straw skep, in which there have been placed a few pieces of guide comb, also makes a good super; but in this case it is advisable to place a piece of queen excluder zinc over the hole on the top of the hive, or the queen will fill it with brood, and little surplus will be stored.—AN ENGLISH BEE-KEEPER.

SIZE OF HIVES.

ON page 113 "An English Bee-keeper" says, "The standard frame is now extensively used, and before condemning it in favour of another size, it is as well if we study the question and see where the difference is. This I venture to say 'G. H.' has not done, as he recommends a hive holding twelve frames, 20 inches by 8½ inches, which is really much smaller than the standard frame hive as advocated in these pages." I may as well undeceive "An English Bee-keeper." I have studied the question well. I knew the method, and practised doubling years ago, when in my teens. But as yet I cannot see the force of "An English Bee-keeper's" reasoning. The arithmetic propounded is not a fair comparison. In the first place we have a hive to take nineteen standard frames, 14 inches by 8½, giving 4522 inches of surface. Next we have twelve frames, 20 inches by 8½ inches, giving 4080 inches of surface, a difference in favour of the former of 442 inches of storage. This may look all right just as it stands, but it will not bear the searchlight.

Let us look at the hive advocated by "An English Bee-keeper." There are ten frames for brood, that is the hive proper, giving 2380 inches of comb surface for the brood nest. Now, when doubling takes place, another hive the same size is placed on the top, which may be termed a super. Excluder zinc is placed between the two hives, and converts them into hive and super respectively. Again, if the hive is not strong enough bees and combs are taken from another stock to make it so. Can the yield of such a hive be called the produce of one stock? Certainly not, for we have the progeny of two queens at work. Moreover, it is only a hive with ten standard frames, with a super of nine frames on, according to "An English Bee-keeper's" own showing.

Let us take a glance at the larger hive; twelve frames 20 inches by 8½ gives 4080 inches of comb surface. In conjunction with these hives,

we use two supers holding ten frames each 20 inches by 5½. We use ten frames in the supers for the same reason given as "An English Bee-keeper," and it is an excellent practice. I find wide combs much easier to extract. So, instead of having 4080 inches of comb surface, we have 6280, changing the minority of 442 into a majority of 1758 inches. Now, I ask in all fairness, Which is the larger hive? "An English Bee-keeper" has gone away from the question altogether, as it was not the amount of storage room for the surplus honey, which can always be provided for. The question first asked, and which has not been satisfactorily answered, was, "Has a queen room for her egg-laying power in the height of the season, when she is capable of laying from 3000 to 4000 eggs per day?"

HOW MANY EGGS A QUEEN WILL LAY.

Has not "An English Bee-keeper" told us at certain times a queen will lay at least 3000 eggs per day, implying that she will lay more? But where does she lay them? Let us see. There are ten standard frames in the brood nest, there are 54,000 cells at most on ten standard frames. If the queen laid 3000 eggs per day she would fill all of them in eighteen days. But the queen has no such room for her laying power, as we must take off two frames for stores and pollen at the very least, and this would leave the queen room to lay little over 2000 eggs per day for twenty days.

DOUBLING HIVES.

Good results can be had from doubling; this I proved years ago, and practise it occasionally now. My objection to doubling is, that I do not like honey taken from old combs from which successive generations of bees have been hatched. To my palate, honey has the richest aroma that is taken from virgin combs, or from combs that have not contained brood. Is not honey an absorbent, and matter of an unpleasant nature imparted to it with old brood combs? Let anyone try for himself honey taken from combs of spotless whiteness, and honey taken from old black brood combs, compare the two and draw their own conclusions.—GEORGE HOWDENSHERE.

LARGE FRAMES.

"WARWICK" has decided to try the large hives, and while thanking George Howdenshere for particulars already given, will greatly appreciate the correct measurements for frames and hives, so kindly offered on page 136.



All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **S. Rose Hill Road, Wandsworth, S.W.**, and **NOT** to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Weed Killers (B. S. K.).—It is impossible for us to say which is the "best" of all weed killers, and thus, in effect, stamp all others as relatively inferior. As a matter of fact we have not tried them all, but those that we have tried answered their purpose well. Procure price lists and testimonials from advertisers of the articles, and let them guide you to a decision.

Lachnanthes tinctoria (Alpha).—We are not aware that this plant is a recognised remedy for consumption. It is a native of North America, and known as the Red-root. It belongs to the order *Hæmodoraceæ*, and grows in or near ponds and ditches in America as an herbaceous perennial, producing sword shaped leaves and a dense cyme of yellow flowers. We do not know that plants are obtainable either in a dried or growing state in this country. They are not credited with the possession of medicinal properties, but the roots have been used in America for dyeing, in the same way as Madder—the root of *Rubia tinctorum*.

Newly Imported Dendrobium nobile (W. T. G.).—If the young shoots in your plants of *D. nobile* are producing roots, and you have the convenience of a warm close house, you may take them off now, but they are in most cases better left on the plants for one season. The fact of the plants being "covered" with the shoots seems to point to the fact that few flowers will be produced, so that you have nothing to lose by putting the plants in a brisk heat, with plenty of moisture, and getting a good long season's growth for them. Then next spring you may cut the old stems with the young shoots out entirely, and put as many as you like into each pot. Or they may be placed singly in small pots, but the former is the quickest way to obtain good specimens.

Pentstemons with Blue Flowers (M. D.).—The following have blue flowers. Seeds can be obtained from Mr. W. Thompson, 34 and 36, Tavern Street, Ipswich. *P. confertiflorus*, *syns. confertus* and *procerus*, *P. cyananthus* var. *Brandegei*, *P. glaber*, *P. heterophyllus*, *P. Jeffreyanus*, *P. ovatus*, *P. secundiflorus*, *P. speciosus*, *P. cœruleus*, *P. Scouleri*. Of these *P. confertiflorus*, *P. glaber*, and *P. cyananthus* var. *Brandegei*, which is considered by botanists only a variety of *glaber*, are the hardiest.

Grapes in Heated Orchard House (W. Berks.).—As you have Black Hamburgh, Madresfield Court, Foster's Seedling, and Royal Muscadine in another house, and require two varieties to follow these, the selection is left to late varieties, which, as a rule, require good heat and a long time to ripen the fruit properly for keeping well. Under the conditions you name we think Black Alicante, a strong growing variety, very fruitful, always setting and colouring well; also White Tokay, an old and little grown variety, that bears fruit freely and ripens well with a little heat in September, likely to succeed under the conditions you name, both being the better with a little heat at starting and when ripening. If the soil is light the chances of success will be more certain.

Lawn Smothered with Daisies (Subscriber).—We once saw a lawn more Daisies than grass completely cured by a dressing of the following mixture:—Sulphate of ammonia, eight parts or lbs.; kainit, five parts or lbs.; bone superphosphate, four parts or lbs.; and sodium silicate, three parts or lbs., mixed, using 6 to 7 ozs. per square yard, 14 lbs. per rod, 1 ton per acre. The dressing was given in the early spring, with a prospect of fair weather, the manure simply burning the hearts out of the Daisies, and making the grass look very sickly for a time, but it grew soon afterwards, and made a splendid lawn. The surface was roughed with an iron rake in April, and ¼ lb. of finest grass seeds sown per rod, rolling down. If light land use nitrate of soda instead of sulphate of ammonia, and as your case may not be so bad as that we experienced, try the effect of half dose on a part at the first, and be guided by results, always choosing fine weather, so that the salts may act on the crowns of the Daisies.

Grubs from Herbaceous Border (F. G. S.).—The "grubs" found in digging one of the herbaceous borders are the caterpillars of the small or "garden" swift moth, *Hepialus lupulinus*, which in the larval state live on the roots of a great variety of plants, chiefly herbaceous, but we have found the caterpillars on Celery, Lettuce, Parsnip, Potato, Strawberry, and even grass roots. They are to be found during the autumn, winter, and spring. At the latter time they turn to chrysalids in an earthen cell in the ground, remaining about a month in the pupa state, and then emerge as moths. Perhaps the best means of getting at these pests is to use a little mustard dross, about half an ounce per square yard, sprinkling it on with a dredger or bellows distributing apparatus during fair weather, and with a prospect of its continuance for some days. This we find to act well on surface caterpillars and other ground pests, but only when it is applied when they are active. By digging the ground on dry days several may be exposed, secured, and an infinitely greater number prevented.

Rust on Sweet Williams (W. J.).—The very fine pustules on the under side of the leaves are fruiting bodies of the caryophyllaceous plant rust fungus, *Puccinia lychnidearum*, in the most healthy and luxuriant condition. The Sweet Williams were also healthy, not unduly vigorous, but much disfigured by the large blotches on the leaves. The disease is a very disastrous one, as the mycelium of the fungus strikes deep and wide in the tissues of the leaves, and causes depressed spots on the upper side of them. The spots change to whitish blotches, and ultimately brown, then fall away, and leave holes or greatly disfiguring parts. Sometimes the pustules are very closely together, but not often confluent, or run into each other, as in the *Chrysanthemum* rust, but the blotches are then much larger, and the plants have a sorry appearance. You need not be alarmed about its spreading to the *Chrysanthemums*. We have numbers of spores of the *Chrysanthemum* leaf-rust fungus, all more or less warted, whilst those of the Sweet William rust fungus are quite smooth. Use the copper sulphate powder preparations, or spray with sulphide of potassium solution, half-ounce to a gallon of water, letting the powder or solution reach the under side of the leaves.—G. A.

Sowing Seeds of Alpines (Armitage).—If a frame or cold greenhouse is at command your seeds should be sown in 5-inch or 6-inch pots. Fill the pots half full of drainage. Prepare a compost of good light soil with about one-third of sharp sand and a little leaf mould. Pass this through a coarse sieve. Place a little of the rougher soil remaining in the sieve over the drainage, and fill the pot with the finer earth until it is about half an inch below the rim. Press this firmly with a flat piece of wood and then sow the seed, which should also be pressed into the soil. Cover the seeds with finely sifted soil, and press this down also. The soil must not be wet, but only slightly damp. Cover the seeds slightly, just so as to prevent any being seen. In the case of larger seeds cover more deeply. In soils liable to be covered with moss the earth to cover the seeds may be burned to prevent the growth of the moss. The pots can either be watered about an hour before the seed is sown or immediately after, taking care in the latter case to avoid disturbing the seeds. The pots containing the seeds must be kept shaded, and the soil never allowed to become dry. When the seedlings appear keep them near the glass and give plenty of air, but do not allow them to be scorched by the sun. Some of the seeds may not germinate for months, and all the pots should be retained for at least a year before presuming that the seeds will not grow. They may also be sown in small drills in the open ground if kept shaded, and the surface never allowed to become dry. The seeds ought to be sown very thinly, and the seedlings pricked out when large enough to handle into other pots or the open ground.

American Productions and Water Lilies (Amateur).—We did not misunderstand your letter, though the one you send now is not quite the same. Some of the newer Water Lilies are of necessity high in price because they are scarce, and they cannot be sold at what you regard as a "cheap rate" till they are much more plentiful. Some of them are not obtainable anywhere at anything like the prices you mention.

Flower Beds (J. B.).—You seem to desire "all the principal carpet bed and flower bed designs" in two books, which will also teach you "how to draw the design." You will find many and varied flower and carpet bed designs in the "Parks and Gardens of London," published at 12, Mitre Court Chambers, Fleet Street, London, E.C. You can obtain it for 2s. 6d. by ordering through a bookseller, or for 2s. 11d. by post from the publisher. Drawing can only be learned by careful and continuous practice, the same as the art of writing is acquired. There must be evening drawing classes in the city near which you reside, and in no other way could you learn the art so well as by attending them. Both geometrical drawing and freehand sketching are valuable acquisitions, and may be of great service to a gardener. When you can draw well all the designs in the book mentioned, you will be able to copy any others, and originate some of your own.

Rust on Clerodendron fallax Leaf (Inquirer).—Yes, we "see" the Bordeaux mixture has not affected the "fungus," because it could not be discovered by the highest power of the microscope at our command, which is sufficient to show everything there is to be seen in the shape of an organism. There certainly were plenty of "rust spots," and these greatly disfiguring the leaf; but they are caused by a member of the animal kingdom, a small mite with a venomous bite, which sort of half burrows in the leaf when hatched from the egg, of which you may see some with an ordinary double pocket magnifier, and abundant numbers with a microscope of about 50-diameter magnifying power. The eggs are globular, shining white or silvery, and from these the mites emerge in the course of a few days, and at once pass their beaks or jaws into the tissues, giving rise to little pustules on the under side of the leaf and to brown spots on the upper surface—the well-known "rust" of Gesneras, Gloxinias and Begonias. It is a species of Tarsonymus, nearly related, if not identical, with the Pelargonium leaf rust insect (T. pelargoni). Tobacco juice at a safe strength has been found useful against the minute invaders. Frequent fumigation or vapourisation deters the pests; but the direct application of the nicotine to the leaves is the better preventive and remedy, taking care not to use it so strong as to injure the plants.

Growing Violets for Profit (W. S.).—We have grown Violets in both the modes you mention by the thousand, and prefer the frames. You must remember that in an unheated house the pots must be protected from frost in severe weather. The plants need not be very large for culture in pots. They are grown from suckers or offsets every year in an open position, having the soil well enriched and firm to secure a sturdy habit and bold crowns, runners being kept down. Such plants, if kept clean, can be lifted in the autumn, potted as you propose, but getting as many crowns as possible into a pot, without overcrowding, or well clear of each other, and removing the old outside leaves, as they have then done their summer's work, in storing matter for the development of flower buds. The best varieties we have grown in pots were Princess of Prussia, a single large-flowered purple, similar to Wellsiana; Marie Louise, mauve lavender blue with reddish purple shades of colour; De Parme, pale lavender purple; Count Brazza's White, the three last being double Neapolitans. For flowering in frames, the plants must be well grown outdoors, lifted carefully, and placed in the frames in September, using good rich soil, and raised so that the plants are well up to the glass. They cannot have too much air, only using the lights to throw off heavy rains, then tilting them at the back. In frosty weather protection over the glass will be necessary, not allowing the sun to fall on the plants whilst frozen, nor to act on the frames when thawed without ventilation. The varieties named are excellent for frames. Get them true, and do not bother about others. The plants will give you flowers from September to April inclusive in all but severe frosty weather. By all means sell near home if you can, otherwise bunch and send to market, making due arrangements beforehand. They only pay under the best of management. Given this also to what you may grow in the house or frames in the summer, the combination ought to leave a fair margin of profit. Some persons succeed, others fail.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (S.)—The flower sent is a small form of the Spring Snowflake, *Leucoium vernum*. (F. S. E.).—1, *Begonia metallica*; 2, *Phormium tenax variegata*; 3, *Acacia cultriformis*; 4, *Hedychium Gardnerianum*. (B. H.).—1, *Asparagus tenuifolius*; 2, *Myrsiphyllum asparagoides*; 3, *Jasminum Sambac fl.-pl.*; 4, *Bambusa Fortunei*; 5, *Freesia refracta alba*; 6, *Davallia canariensis*. (G. M.).—1, *Dendrobium Phalaenopsis Schröderianum*; 2, *Sparmannia africana*; 3, *Dendrobium nobile*. (Ignoramus).—*Asparagus deflexus*.

Names of Fruits.—Notice.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. (W. J.).—If both the fruits came from the same tree, they well exemplify the difficulty of naming. One is conical and ribbed, with a short thick stalk set in a shallow cavity; the other is inclined to be oblate, not ribbed, with a distinctly slender stalk set in a deep cavity. Both cannot possibly be typical, but a fruit between the two would resemble Calville Rouge d'Hiver. (S. O.).—1, Striped Beefing; 2, Alfriston; 3, Sturmer Pippin. (B., Herts).—1, Nec Plus Meuris; 2, Joséphine de Malines.

TRADE CATALOGUES RECEIVED.

J. Carter & Co., High Holborn.—Farm Seeds.

Dicksons, Chester.—Farm Seeds.

P. Henderson & Co., New York.—Seeds.

Little & Ballantyne, Carlisle.—Farm Seeds.

A. Perry, Winchmore Hill.—Rock Plants, Carnations.

COVENT GARDEN MARKET.—FEB. 23RD.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1 6	to 4 0	Grapes, lb. ...	2 0	to 3 0
Cobs ...	21 0	to 2 6	Lemons, case ...	11 0	to 14 0
Filberts, 100 lbs. ...	0 0	to 0 0	St. Michael's Pines, each	2 6	to 5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	to 0 0	Onions, bushel ...	3 6	to 4 0
Beet, Red, doz. ...	1 0	to 0 0	Parsley, doz. bnchs. ...	2 0	to 3 0
Carrots, bunch ...	0 3	to 0 4	Parsnips, doz. ...	1 0	to 0 0
Cauliflowers, doz. ...	2 0	to 3 0	Potatoes, cwt. ...	2 0	to 4 0
Celery, bundle ...	1 0	to 6 0	Salsafy, bundle ...	1 0	to 0 0
Coleworts, doz. bnchs. ...	2 0	to 4 0	Scorzonera, bundle ...	1 6	to 0 0
Cucumbers ...	0 4	to 0 8	Seakale, basket ...	1 6	to 1 0
Endive, doz. ...	1 3	to 1 6	Shallots, lb. ...	0 3	to 0 0
Herbs, bunch ...	0 3	to 0 0	Spinach, pad ...	0 0	to 0 0
Leeks, bunch ...	0 2	to 0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	to 1 9
Lettuce, doz. ...	1 3	to 0 0	Tomatoes, lb. ...	0 4	to 0 9
Mushrooms, lb. ...	0 6	to 0 8	Turnips, bunch ...	0 3	to 0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ferns, var., doz. ...	4 0	to 18 0
Aspidistra, doz. ...	18 0	to 36 0	Ferns, small, 100 ...	4 0	to 8 0
Aspidistra, specimen ...	5 0	to 10 6	Ficus elastica, each ...	1 0	to 7 0
Azalea, per doz. ...	30 0	to 42 0	Foliage plants, var., each	1 0	to 5 0
Cineraria, per doz. ...	8 0	to 12 0	Hyacinths, doz. pots ...	8 0	to 12 0
Cyclamen, per doz. ...	9 0	to 18 0	Lilium Harris, doz. ...	12 0	to 18 0
Dracæna, var., doz. ...	12 0	to 30 0	Lycopodiums, doz. ...	4 0	to 6 0
Dracæna viridis, doz. ...	9 0	to 18 0	Marguerite Daisy, doz. ...	6 0	to 9 0
Erica hyemalis, per doz. ...	9 0	to 15 0	Myrtles, doz. ...	6 0	to 9 0
„ gracilis, per doz. ...	6 0	to 9 0	Palms, in var., each ...	1 0	to 15 0
„ various, per doz. ...	8 0	to 12 0	„ specimens ...	21 0	to 63 0
Euonymus, var., doz. ...	6 0	to 18 0	Pelargoniums, scarlet, doz.	4 0	to 6 0
Evergreens, var., doz. ...	4 0	to 18 0	Tulips, various, doz. bulbs	0 9	to 1 6

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2 0	to 4 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Arum Lilies, 12 blooms ...	2 0	to 3 0	Mimosa or Acacia, bunch		
Asparagus, Fern, bunch ...	1 0	to 2 6	(French) ...	0 9	to 1 0
Azalea, dozen sprays ...	0 6	to 0 9	Narciss, white (French)		
Bouvardias, bunch ...	0 6	to 0 9	dozen bunches ...	2 6	to 5 0
Carnations, 12 blooms ...	1 0	to 3 0	Orchids, var., doz. blooms	1 6	to 12 0
Chrysanthemums, 12 bnchs. ...	8 0	to 15 0	Pelargonium, doz. bnchs.	6 0	to 9 0
Daffodils, doz. bunches ...	5 0	to 9 0	Roses (indoor), doz. ...	0 6	to 1 0
Eucharis, doz. ...	3 0	to 5 0	„ Tea, white, dozen ...	1 0	to 2 0
Euphorbia jacquiniæflora,			„ Yellow, doz. (Perles)	1 6	to 4 0
per bunch ...	1 0	to 2 0	„ Safrano (English doz.)	1 0	to 2 0
Gardenias, doz. ...	5 0	to 8 0	„ „ (French) per doz.	1 0	to 1 6
Geranium, scarlet, dozen			„ „ per 100 ...	5 0	to 7 0
bunches ...	6 0	to 9 0	„ „ Pink, dozen ...	2 0	to 3 0
Hyacinths (Roman) dozen			„ „ Smilax, bunch ...	1 6	to 2 0
bunches ...	4 0	to 8 0	Snowdrops, 12 bunches ...	0 9	to 1 6
Lilac (French), bunch ...	3 0	to 4 0	Tuberose, 12 blooms ...	0 6	to 0 9
Lilium longiflorum, 12 blms	4 0	to 6 0	Tulips, dozen blooms ...	0 6	to 1 6
Lily of the Valley, 12 sprays	0 9	to 1 6	Violets, dozen bunches ...	0 9	to 2 0
Maidenhair Fern, dozen			„ „ Parme (French),		
bunches ...	4 0	to 8 0	bunch ...	3 0	to 4 0
Marguerites, doz. bunches	2 0	to 3 0			



COWS AND THEIR CARE.

It seems a wonderful thing that a few gallons of milk require such an immense machine as a cow for their production; but so it is. The great unwieldy mass of flesh on four legs that requires much food and care is our only vehicle for the produce of one of our most valuable articles of food.

The milk of smaller animals, though at times used for domestic consumption, can never fill the place of cow's milk. There is first the smaller quantity, but the great fault lies in the generally curious flavour of other milks—flavours that require much time and a hearty good will to adjust themselves to the public taste. As a rule, it is the true sign of a disordered stomach or system when fresh milk proves unpalatable—the food is so natural, so easily assimilated, that it is found in every menu in some form or other. Happy those who have the chance of a full supply daily! We mean plenty to drink (if liked), plenty for puddings, and plenty to dilute the tea and coffee cups. It is a great wonder to us that milk and its side adjuncts are not dearer.

Except those well acquainted with animal life, few can conceive the immense quantities of food required to produce the framing milk. As we said before, the cow has a great bulk, and that bulk is not sustained on air. Watch a cow out at grass, except during the heat of the day, and certainly during the night, she is honestly and steadily at work—munch, munch. Of course people will say the rent of grass land is not heavy, but she passes a great deal of her time in close quarters, when all food and water has to be separately served; what about rations then? Indeed, even during the summer months the wise farmer supplements the grass by giving some more concentrated food while she is tied up for milking. It is only for about three months that a high milking average is maintained, then the quantity steadily diminishes till it is essential that she should have a resting time before the next calf appears.

There has been much discussion lately as to sanitary cow houses; this quite as much in the interest of the cow as the milk consumer. Where poor, wretched cows are tied up year in year out there is the greatest need of supervision; but at present we seem to be running a good chance of being too sanitary. We are just off to the other extremity, and stand a great chance of killing cows by too much fresh air as we have hitherto done by allowing the evils of overcrowding. To keep up a good supply of milk warmth is as essential as food, and huge draughty cow houses will probably induce some dire lung disorders, as well as materially lessen the milk supply.

We do not want to be mistaken. By all means have plenty of light and air, but no draughts. Some local authorities are insisting on 800 cubic feet for each cow. Now we should hardly think this necessary; indeed, so great an authority as Primrose McConnell considers that 600, or even 400, cubic feet is a very good allowance per cow. It would be a serious addition to a cowkeeper's expenses if he had to put down some form of heating apparatus to rectify the too great flow of fresh air in his cow houses.

Much has been written and said *re* the cleanliness of cows. When at large there is little to complain of; it is those tied-up which get themselves into such messes, and we find few cow standings properly adjusted. The British workman is a bit pig-headed. He cannot see, or will not see, why a standing should be made to slope towards the gutter. The slope need not be very great, indeed it is better not so. An inch is quite enough, but the gutter behind must be at least 7 or 8 inches deep. Some breeds of cows, too, appear of a cleaner nature than others. The great, heavy, blundering Shorthorn appears to get herself in the way of dirt more easily than the smarter, trimmer matron. There is a great deal of cleanliness necessary in relation to the milking vessels, and the state of the milkers. It has been proved over and over again that a cow pays for grooming.

We have heard much about the aggravating attacks of the warble fly. Well, this pest, as we have said in previous articles, is quite under our control. The means are so simple, the remedies at hand, that it is only sheer idleness that allows our cattle to be thus tormented. Many remedies are suggested, but the simplest are the best, and a decoction of a well-known sheep dip applied at frequent intervals will not only stop the ravages of the warble fly, but will kill any other vermin that may be found on the skin.

A herdsman interested in his charge will always find time for a little extra grooming without the master being constantly on the look out, but a word of praise has a wonderfully stimulating effect. We all like to see our efforts appreciated, and a good understanding between master and man tends much to the well-being of the stock.

WORK ON THE HOME FARM.

We see in the papers reports of slight frosts in some parts, but with us it has been extremely mild, so that every time we pass the Turnips we see a difference in the height of the tops. Some are 2 feet high now, and unless checked they will ere long show signs of flowering. The Swedes, too, are beginning to run to seed, and will lose much of their quality. Daily papers report a touch of winter in Southern Russia, so perhaps we may have a check yet.

Some Wheats would nearly cover a hare, and fears are expressed that they are too forward. We hear of farmers being advised to eat their Wheat off with sheep folded closely on the land. This may do very well on good land very high in condition, but the circumstances of the case would have to be very special indeed to induce us to put such an idea into practice.

We should prefer to give the Wheat a thorough harrowing; a good knocking about will keep it back, and if half of it be pulled up no harm will be done, for it will soon fill up again. We knew of a case where so much young Wheat was pulled up with harrowing that it had to be heaped and carted off, but the crop was the best the farmer ever grew.

Referring again to the Turnips, we are shown how necessary it is to store in autumn the roots required for consumption after January. Weather makes little difference, and the expense is always returned with good interest. If the mild weather should continue and Swedes go on running, the tops had better be cut off with a Turnip hook a couple of inches above the bulb. This will check them until they form a fresh top.

Lambing is now becoming general, and we would remind our readers that the sanitary condition of the lambing fold and pens is the chief essential to a fortunate and successful lambing period. If a new pitch for the fold cannot be had every year, then the old site must be well cleansed and disinfected before use. When lambing is half over, the bedding should all be cleared away and new brought, the ground and fencing being well watered with disinfectant. All dead lambs and decaying matter should be buried at once, and not left on the pen roof, as we have so often seen.

The ewes must not be kept in the pens any longer than absolutely necessary. As soon as the lambs can and will follow them they are better in the open air.

NATIONAL POULTRY TEST.

MANY of your readers may be interested to know that some 150 landowners, tenant farmers, and others have signified their intention to take part in the above test scheme; and as these are widely distributed over Great Britain, we may reasonably hope, twelve months hence, to be able to determine as to whether egg producing can, or cannot, be made a profitable branch of our agricultural industry.—K. B. BAGHOT-DE-LA-BERE.

[We publish the above information. The "test" referred appears on page 630, in our issue of 30th December, 1897. On page 47, 13th January, 1898, the scheme was commented on by a writer who has tested the question of egg production on his own farm. Many trials of a similar nature to that proposed by Mr. Baghot-de-la-Bere have been made from time to time during the past forty years. Though a few of these were promising at the first, they did not by any means subsequently equal the anticipations of their promoters, and it may be suspected that the figures which may be produced from the results of one or two years' experience will be inadequate for fully and fairly representing the profit and loss of egg production in one acre wired-in grass runs.]

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.
1898.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
		Dry.	Wet.			Max.	Min.	In Sun	On Grass	
February.										
	inchs	deg.	deg.		deg.	deg.	deg.	deg.	deg.	inchs.
Sunday 13	30.112	46.3	46.1	S. W.	42.8	47.2	44.6	71.4	42.0	0.029
Monday 14	30.209	42.6	41.1	W.	42.0	51.6	38.1	73.2	32.2	—
Tuesday 15	30.262	48.1	45.6	S. W.	42.0	54.1	41.9	70.3	34.9	—
Wednesday ... 16	30.131	44.7	41.2	W.	43.6	53.9	42.1	92.1	37.0	—
Thursday .. 17	30.184	42.0	38.9	W.	43.0	47.9	40.1	72.6	34.4	0.089
Friday 18	29.835	39.4	38.9	N. E.	42.9	40.8	38.7	50.6	38.6	0.151
Saturday.... 19	29.953	33.6	30.4	N. W.	40.9	43.1	29.6	71.3	25.3	0.010
	30.098	42.4	40.3		42.5	48.4	39.3	71.6	34.9	0.279

13th.—Almost continuous rain from 6 A.M. to noon; sunny afternoon, and fine night.

14th.—Fine and bright early, but not much bright sun after 11 A.M.

15th.—Overcast morning; a little sun in afternoon; fine night.

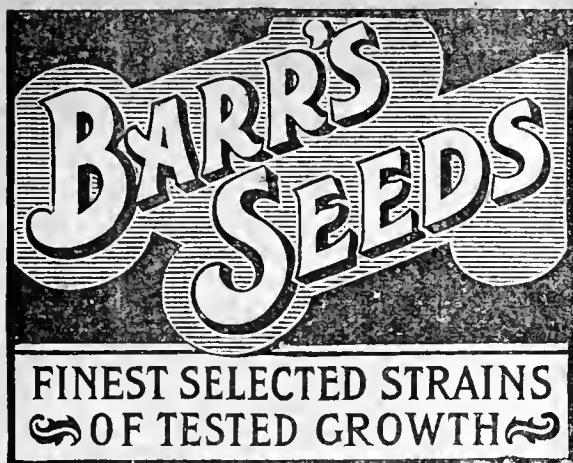
16th.—Bright sunshine almost throughout.

17th.—Overcast, with occasional spots of rain early and in evening; fair day, with intervals of sunshine.

18th.—Dull, damp, and rainy from midnight to 2 P.M., and very wet snow till 3.30 P.M., then clearing, and bright night.

19th.—Almost cloudless early; bright sun all morning; cloudy at times in afternoon.

The fine weather with high barometer continued till towards the end of the week, but temperature and pressure fell towards the close, and the weather became unsettled.—G. J. SYMONS.



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1 PINT SCARLET RUNNERS.	1 PACKET LEEK.
1 PACKET BEET.	1 " MELON.
1 " BORECOLE.	4 OZ. MUSTARD.
3 PACKETS BROCCOLI.	4 PACKETS ONION.
1 PACKET BRUSSELS SPROUTS.	1 OZ. PARSNIP.
3 PACKETS CABBAGE.	3½ OZ. RADISH.
1 PACKET COLEWORT.	1 PACKET SALSIFY.
1 " CABBAGE SAVOY.	1 " SCORZONERA.
2½ OZ. CARROT.	4 OZ. SPINACH.
2 PACKETS CELERY.	3 OZ. TURNIP.
1 PACKET CAULIFLOWER.	1 PACKET TOMATO.
3 OZ. CRESS.	1 " VEGETABLE MARROW.
1 PACKET CRESS, American or Winter.	1 PACKET THYME.
	1 " POT MARJORAM.
	1 " SUMMER SAVOY.
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Journal of Horticulture.

THURSDAY, MARCH 3, 1898.

THE JOURNAL OF HORTICULTURE can be obtained from the Office, 12, Mitre Court Chambers, Fleet St., London, post free for a Quarter, 3/9. Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.

THE WINTERLY WAVE.

ONE of our poets has written two sonnets, called respectively "Natura Maligna" and "Natura Benigna." Now, as we write, the two aspects of Nature of which the poet tells are present with us. The flowers which were wooed to come into bloom by the mild season have been assailed by wintry winds and keen frost, and have been covered with snow. To-day the sun and the sea breezes have thawed some of the snow, but much of it still lies, and the flowers peep through its thick covering. With this keen frost and coverlet of snow our story of the flowers of the time must be a short one. First must come the Daffodils, at the sound of whose name there comes a flood of joyous thoughts. Not many are there yet, but those which have come give us much delight. The quaint little Narcissus minimus was quite hidden in the snow until the sun removed its covering and again gave us its golden trumpets so dainty and small. A clump of *N. pallidus præcox*, on a sunny rockery, were bent to the ground and, so far as could be seen, looked limp and lifeless. As the day went on they raised themselves, but though no longer prone, could not throw off the snow which clung to their perianths. Singular, yet beautiful, was their appearance. Their pale yellow blossoms looked brighter and deeper against the snowy carpet from which they sprang, and the patches of snow adhering to the flowers resembled some white foam placed there to heighten their beauty. The deeper yellow flowers of the Saragossa Daffodil looked brighter as they raised themselves in the border not far from their paler sisters from the Pyrenees. Others there were just ready to open, but they must dally yet until the winds blow with softer and milder breath. Such is a description of the weather and the flowers in Dumfriesshire.

Wonderful, too, is the depth of colouring shown by the common yellow Crocus when surrounded by the snow. The bulb dealers call it "golden yellow," but emerging through the white carpet it is not golden yellow but deep orange. Deeper still is a little Crocus which came here from

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Holland, under the name of *C. Olivieri Suterianus*. This is not correct, as *C. Olivieri* and *C. Suterianus* are considered by authorities on the genus to be distinct. So far as one can judge the *Crocus* is *C. Suterianus*. It is a small but pretty flower, deep orange in colour, and less liable to injury from the storms of the early season than larger varieties. The hybrid *Chionoscillas* have begun to bloom. There are many from seeds saved from one of the true *Chionoscillas*—i.e., the progeny of a *Chionodoxa* and *Scilla bifolia*. Some have gone back to the *Glory of the Snow*, others are *Scilla bifolia*, and nothing more; while some few show their hybrid origin, and are *Chionoscillas*. A few hybrids between some of the other *Chionodoxas* and other *Scillas* ought to give us new and welcome forms.

Very beautiful are the *Lenten Roses*, and those who have plenty of space might well devote some of it to raising and testing seedlings of these *Hellebores*. The charms of a great number are only revealed to him who lifts up the blossoms to examine the interior of the flower. Rich purples, pale roses, whites, and other shades present themselves, with some beautifully spotted forms as well. Those who cannot save seeds from their own plants, or who are not possessed of *Lenten Roses* of the most advanced types, will find that good strains can be obtained which will yield flowers of the greatest beauty. As the seeds are generally slow of germinating they may with advantage be steeped in tepid water for twenty-four hours before sowing. I prefer sowing in pots and keeping these under glass, but some are fairly successful in raising seedlings in the open ground. One very good gardener of my acquaintance grows many from seeds sown in the border under an Apple tree; they are slightly covered with soil, and then with a slate, which is pressed down on them and left until the young plants have made some growth round the edge of the slate. I had intended to say something about the best of the *Lenten Roses*, which may almost be reckoned among florists' flowers, and also a few words anent the several *Helleborus* species of less striking colours but of a modest but attractive character. Space will not permit at present, and a brief *resumé* must suffice for what mention remains of other flowers.

There are patches of *Squills*, bright blue and effective, amid the snow. *Scilla bifolia* in several varieties and *S. sibirica* are there, and even when the snow has gone they contrast with the *Galanthi*, which will remain. The earlier *Snowdrops* will soon be over, but there are several species or varieties which have not reached their full beauty. *Poppy Anemones* look gay though a little tarnished by the weather. They are not numerous yet, but cast in the shade, so far as size is concerned, the exquisitely beautiful flowers of *Anemone blanda*. Bright are the bushes of *Erica carnea*, red and white; pleasing are the early *Saxifrages apiculata*, *Boydii alba* and *Burseriana*; welcome are the *Primroses* and the few *Auriculas* which keep them company. The *Snowflake* is not yet over, and the charming *Rhododendron præcox* has thrust its coloured petals through their enveloping sheaths, and only awaits a few days' sun to open. Faint-coloured and faded have grown the *Winter Aconites*, but *Iris reticulata major* will open soon, and Dr. Stuart's variety of the bright *Primula marginata* has commenced flowering. As the sun strengthens with the advancing day the clumps of *Crocus* open and display their glowing various-coloured cups before our eyes. Though winter is with us, they entice us to lay down the pen and go into the garden to see their beauties—familiar, yet ever new.—S. ARNOTT.

LAWNS AND ALLIED SUBJECTS.

(Continued from page 170.)

IN connection with our last paper, chiefly occupied with effective lawns from a landscape view, as well as the advantages derived from judiciously planned open stretches in the matter of keeping, it would be scarcely fair to our beautiful trees, the *Coniferæ* principally, to exclude them from a passing thought not irrelevant to our subject. In the pleasure grounds nought but the greensward as a groundwork can give, as a rule, the most pleasing effect; and in turning from ideal primness to the picturesque beauty of those grounds probably known as the shrubbery, and probably, too, not in the immediate line of vision from the windows, a greater freedom from that ultra-neatness, which is never to be condemned, is in fact essential to the lawn proper, gives full facility in the way of top-dressing or other means to the end of doing the trees justice.

Here their arch enemy, the lawn mower, shall not come to mangle their lower members or bark their trunks. Being still in the kept grounds, however, obviously a margin on each side of the walk, entailing one or possibly two breadths of the mower to keep all in order, is necessary, especially to prevent grasses seeding upon the gravel. In deep bays or in the background where groups or specimens of ornamental trees can be made happy, a couple of scythe mowings during the season will be all-sufficient. This system provides, too, for the naturalisation of favourite flowers, such as nodding *Daffodils*, "that come before the swallow dares," with the humbler *Snowdrops*, *Crocuses*, *Scillas*, and *Dogstooth Violets*. These will be well over and sufficiently matured for the first scythe mowing, which is no impediment to their welfare; another mowing at the end of the summer will keep all presentable so far as this position is concerned. I may be pardoned in straying a little from the text if readers will contrast such trees dotted about a lawn, probably starved, possibly damaged, with the more natural condition obtaining with "unkept" grass, and above all things justice must be done to the lawn proper, to which we now return.

MAKING NEW LAWNS AND RENOVATING OLD ONES.

From early autumn and well on into spring a fairly long season obtains for those who perforce of circumstances cannot always do what is felt to be the right thing at exactly what is known to be the right time. As a rule, we may take it that autumn for laying turf, and spring for sowing the seeds, is the soundest policy whichever of the two methods is adopted. In the matter of turfing, if the operation can be concluded before severe frost is to be expected, it is a wise course for several reasons, one of which is that if the new turf can be laid early, ere the soil has cooled down, root action is promptly induced, the grass is fairly established, and better able to withstand a spell of parching weather should such occur the following season. Delays often bring difficulties, too, in the matter of a quantity of frozen turves on hand, as I once found when caught in the act of carrying out some rather extensive alterations by a spell of Arctic severity, for after some considerable time ere we could proceed, not only discolouration of the grass, but a good deal of disintegration of the rolled up turves by the action of frost gave considerable trouble in the laying process.

The preparation of the ground, whether for turves or for seeds, is of primary importance, considering the permanent character the lawn is to hold. Unfortunately, in the case of new buildings, a considerable quantity of excavated subsoil is too often available for finishing off surface levels, and responsible for bad work in the best position—near the house; this, of course, in cases where the subsoil is sour, tenacious, and generally unfit. But recently an example came under notice where similar uncongenial soil had been formed into mounds near the dwelling, and planted at some considerable expense with choice shrubs, which lately stood as the dead or dying witnesses of a mistake. In the matter of lawn-making such mistakes are costly in more senses than one.

Too much pains cannot be taken in a thorough preparation of the soil, first by the vigorous removal of old tree stumps or other obstructions, and then by draining at an adequate depth if the subsoil renders any draining necessary; in fact, all the preparations considered necessary for a good kitchen garden, so far as the soil is concerned, may well be given where the object is to make a perfect lawn, and retain it in perfection.—SYLVA.

(To be continued.)

BROWNEAS.

ANYONE who has the room at his disposal in a large house that can be kept at a stove temperature would do well to include one or more species of this genus among its occupants. The recommendations in their favour are, that in most cases they take high rank as foliage plants, and in almost every instance they are among the finest of stove flowering shrubs.

At Kew several species may now be seen in flower in the Palm house. *B. grandiceps* is there represented by a plant 20 feet high. The handsome pinnate leaves of this particular plant are between 2 and 3 feet in length, and are made up of from eighteen to twenty pairs of leaflets, many of which are 8 inches long. The flowers are bright red, and produced in round heads 6 to 8 inches across. Near by is a dwarfier but much better furnished plant of *B. Crawfordii*. This is a hybrid between the former and *B. macrophylla*. The leaves are not so long as in the former, but the leaflets are larger. The heads of flowers are quite as bright-coloured as in *B. grandiceps*, and if anything larger. This plant is planted out, and grows far more luxuriantly, and at the same time flowers more freely, than plants in pots. Others are to be seen in flower, but at present these are the most showy.

An additional item in favour of *Browneas* as ornamental foliage plants is, that when the leaves are first developed they are beautifully mottled with brown and green, and contrast finely with the dark green of the old foliage. Although a large house is necessary to grow these plants to perfection, plants a few feet high, which have been rooted from cuttings, can be flowered successfully.—D. K.



DENDROBIUM SPECIOSUM HILLI.

THE "heroic treatment" of *Dendrobium speciosum Hilli*, recommended by your correspondent, "Herefordshire Incumbent," is quite unnecessary. I have four or five large plants of *Dendrobium speciosum* and *Dendrobium speciosum Hilli*, which flower abundantly every year, and have done so for many years, except that if one of them has an unusual quantity of flowers one year, it will sometimes not flower the next year. They are now in flower, and I counted just eighty flowers on one spike on one of them. They grow summer and winter on the front shelf of a cold greenhouse (just kept above freezing in very cold weather) and receive no attention of any kind except an occasional watering. The pots are filled chiefly with stones and broken crocks.—C. W. STRICKLAND.

ONCIDIUM SPLENDIDUM.

THE beautiful golden yellow blossoms of this Orchid, produced on long branching racemes, are almost exact counterparts of *O. tigrinum*, of which species many botanists agree in calling it a variety. But so distinct in every way is the growth and treatment required that it would lead to much confusion in gardens were this strict botanical system adhered to. The pseudo-bulbs are roundish, deep shining green, the foliage very thick and leathery, of a bronzy green hue, quite different from the bright green of *O. tigrinum*. The flower spikes appear at the side of the last formed pseudo-bulb, and on strong plants are from 2 feet to 3 feet high, much-branched and many-flowered.

The sepals and petals are yellowish, blotched with chestnut brown, but they form rather an insignificant part of the whole. The lip is of the brightest chrome yellow, perfectly clear in colour, and of distinct outline. *O. splendidum* (fig. 29) is a strong healthy grower when in suitable quarters, and can be allowed pots of medium size, well drained, and a free open compost. This may consist of equal parts of peat, rid of all earth and sand, and sphagnum moss, in about equal proportions, plenty of large rough lumps of charcoal and crocks being mixed with this to insure the ingress of air to the roots. The best plan is to fill up to within an inch of the rim with drainage, and leave the upper inch for compost, this doing away with any suspicion of closeness, yet providing a good rooting medium.

The temperature of the Cattleya house suits it well while making its growth—in fact, it is suitable all the year round; though where a house is set apart for the Mexican *Lælias*, the plants may be placed here for a month or two, if they seem inclined to rest that long. The growth, as a rule, pushes from the base about March or April, and continues growing until late in autumn; then if the spikes do not appear at once a short rest may be given, but as a rule if there is any rest it is after the flower spikes are over. All the year round a nice light position should be allowed, the sun shining full on the plants after closing time, this causing a brisk buoyant atmosphere, in which growth is very rapid.

Fire heat in dull weather is necessary to keep the temperature up to the mean, but it is better not to drive this much. Growth under these conditions is soft and tender, easily damaged by the slightest check, and apt to be attacked by spot. Light syringings in bright weather are refreshing to the plants, but must not be overdone, and should be entirely discontinued in dull weather. Water at the roots should be freely applied as long as growth is active, but when the plants are entirely at rest only enough to prevent shrivelling is required. *O. splendidum* was known and cultivated on the continent years before it was in Britain. It flowered first in this country in 1870, but was rare and valuable for many years afterwards; but Messrs. Sander having imported it in quantity, it soon after became well known.

CATTELEYA TRIANE.

The many varieties of this useful and beautiful Cattleya are just now in their fullest beauty, all tints from the purest white to the deeper tints of rose and purple being found among them. It is a widely distributed species, naturally being found over large tracts of country in South America, and doubtless this in a manner accounts for the great variation found in the plant. The habit is similar to that of most of the labiate Cattleyas, and with them it may be easily grown with proper care. Small plants may be grown in pans suspended from the roof, this allowing a good light to play all around them, and making them dry readily at the root after watering. Stronger plants may be grown in pots in the Cattleya house on a stage as near the glass as convenient.

Let the pots be clean and thoroughly drained, allowing of a couple

of inches of good rough material, consisting of peat and sphagnum moss, with a liberal addition of crocks and charcoal. The drainage crocks should be protected with a layer of the rougher portion of the moss, and the plant must be placed in position with the base of the leading pseudo-bulbs a little above the rim, the compost being brought up to them in a convex mound. The best time to repot is soon after the flowers are past, for if left long after this the young shoots at the base will be getting ahead, and are apt to be snapped off with the dibber, this causing the plants to be dependent upon back breaks, which are never so strong as the first lead.

After potting careful watering is necessary until roots are again somewhat freely emitted, when the supply must be gradually increased. The plants require as much moisture when growing and rooting freely as do most Orchids. The growth finishes in the autumn, each pseudo-bulb that is strong enough having its flower sheath. The plant must now be kept in a good light and exposed to as much sun as possible without damaging the foliage. Reduce the supply of water by degrees, but never entirely withhold it, especially toward the end of winter, when the flowers are forming inside the sheaths. Many fine plants have been ruined by inattention at this stage, and their shrivelled appearance afterwards is attributed to their not being strong enough to flower, while really they are starved for want of water.

Among varieties the best of all is the albino form, *C. Trianeæ alba*, this having flowers of the purest white without a tinge of any colour except a yellow blotch on the lip. *C. T. Schröderiana* is a delicate and beautiful form with sepals and petals of the palest blush and a golden yellow centre to the lip. *C. T. delicata* has pure white outer segments and a bright blotch in front of the lip. The variety *rubella* is a very richly coloured form, the large crimson-purple blotch on the lip being exceptionally showy. Many others may be mentioned; in fact their number is as large as those of any species, but a repetition of their features does not make very interesting reading.—H. R. R.

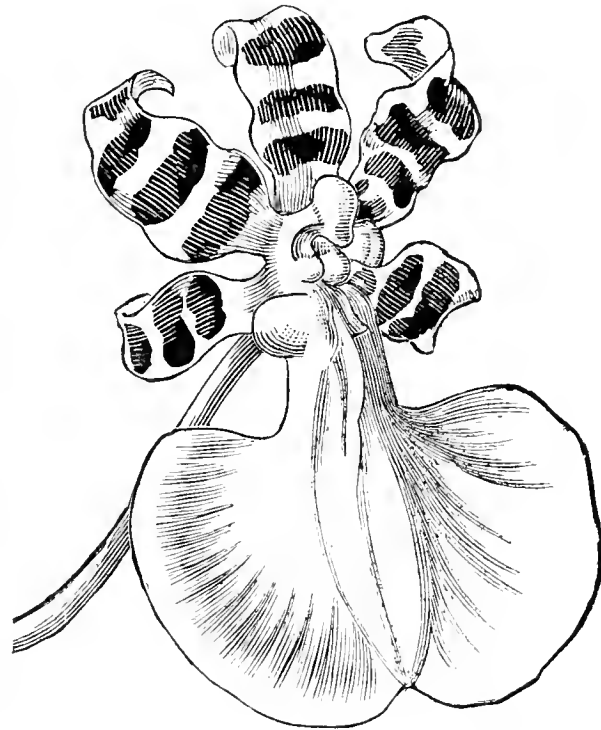


FIG. 29.—ONCIDIUM SPLENDIDUM.

HARMFUL AND HARMLESS GARDEN MOTHS—16.

"WHAT a beautiful moth!" said a person, who made no pretension of special admiration for insects, when he observed a specimen of the bordered Gothic resting upon a tree on a July day. Sometimes we wonder why the old naturalists chose the names they did for many species; there is nothing one sees particularly Gothic about *Neuria Saponariæ*, nor its two kindred species, unless, indeed, it was fancied that the transverse lines on the wings resembled, in their tracery, the form of Gothic columns. The beauty of the moth arises from the contrast between the rich brown wings and the dark and lighter markings upon them; the dark take the form of black spots or lunules, the others are pale lines or rays. The fringe of the wings is of two colours, and the eyes are very hairy. It occurs, not abundantly, in the South of England.

From its feeding on low plants near the earth, or now and then beneath its surface, the caterpillar is seldom noticed; it has a horny plate behind the head, and is smooth, in colour reddish brown with faint stripes. It has been taken on several species of *Silene* and *Lychnis*. Guenee says it is fond of the White Campion. Smaller in size is a Gothic moth found in Devonshire and the Isle of Wight, called *Heliophobus hispidus*; rather rare, it has no black tints, but many light spots and lines upon the ground colour. The caterpillar feeds upon the roots of various grasses. Allied to this is a moth too well known in some localities, but it is seldom seen about gardens; it is somewhat like the Gothics, but is an August species, the caterpillar feeding in early summer. This is the antler (*Charæa graminis*), which sometimes swarms upon commons and meadows, causing much damage to the crops of hay in Sweden. With us, it is

chiefly noticed in the north. Of all the grasses it seems to prefer *Poa annua*.

Moths cannot manage to hide themselves in the grass of a well-clipped lawn, but I have often seen children amusing themselves in hunting for these insects on lawns or banks where the grass has been suffered to grow long. A variety of species hide from view thus, in the daylight, those more particularly which are grass-eaters while in the caterpillar stage. Two of these that are tolerably common throughout Britain are the light arches and the dark arches, moths which occur about midsummer, or a little later. The first, also called *Xylophasia lithoxylea*, is a whitish brown, with dark streaks and blotches; the thorax has a crest, and the tail a large tuft. The stout caterpillar, which is dull white, marked by rows of black shining spots, has been dug up in May at the roots of grasses, and about the same date that of the dark arches, or *X. polyodon*, becomes adult. In appearance it is similar to its relative; but the moth is very differently marked, being of several shades of brown, conspicuously blotched and lined; part of one of these lines exactly resembles the letter W. Some of the northern specimens of the species have the upper wings all dingy black. Then upon the roots of Poas and other grasses lives the caterpillar of a pretty moth, which we see passing from flower to flower in broad daylight, not concealing itself, as do most of the Noctuas. It is found throughout England and Ireland, and is called the ear moth (*Hydroecia nictitans*), for, in the centre of the fore wings, which are of a deep reddish brown, is a white spot resembling the human ear, also sundry lines across give the appearance of network. It is seldom that any of these caterpillars do noticeable harm to lawns.

We come now to a genus too well known to the gardener, especially while the insects are in the caterpillar stage, when many of them show no inclination to hide themselves, but feed boldly upon the produce of our gardens. The caterpillar of one familiar species I have had brought me several times as a curiosity; seemingly something about it caused wonderment, though it is not so notably different from many of its brethren, but is conspicuous by its marks or stripes on the sides. It is not, however, the caterpillar, but the moth itself, that gives the name of "the dot" to the species, suggested by a pure white patch on the wings, with a smoky centre. The Latin name is *Mamestra Persicariae*, not very appropriate, since it is by no means attached to *Persicaria* as food; indeed it is a caterpillar of general tastes, eating various herbaceous plants and shrubs, ranging from *Pelargoniums* to *Roses*. Quite late in autumn I have seen it on flower beds, but it is chiefly noticeable through August and September.

One singular fact about this caterpillar is that we find it of two colours, green and brown; the former usually produce male moths, the latter females. One of these, when we have once recognised it, we are sure to know again by his small mottled head, behind which is a dark green square patch on the back, and the hump upon the last segment, also by the characteristic double row of V markings pointing towards the tail. The winter is passed underground, as a chrysalis, at no great depth. Then there occurs about gardens in some counties, while in others it is unknown, the moth called the white colon, *M. albicolon*, taking these names from two white dots near the lower extremity of the greyish-brown fore wings, which are like the colon sign. This is an earlier moth, coming forth about May, when it flies in waste places; it usually lays eggs on some *Chenopodium*, but having a partiality for Lettuce. It also enters gardens, where the caterpillar has been taken upon this vegetable, and sometimes on others. It is very smooth, of a grassy green with a few pale stripes, and easily escapes notice; when alarmed it drops instantly, curled into a ring. The season for it is June and July. A curious contrast to its companion species is the crescent-striped moth, which is found plentifully along the banks of the Thames below Gravesend, the caterpillar living on Sea Wormwood.

Now we come to the moth most detested of all the Noctuas, for which neither gardener nor farmer will say a good word. It is as frequent nearly in the flower as in the kitchen garden. The only thing I can say in its behalf is that, to my knowledge, the caterpillar does not meddle with fruit trees. The Cabbage moth, or *Mamestra Brassicae*, was, no doubt, created for some good purpose. One naturalist of note suggests it may have helped to keep down a superabundant growth in wild districts; but we would gladly exclude the species from our gardens now. The moth does not vary much. The expanded wings measure about 1½ inch; these are brown, indistinctly mottled with darker brown and grey. Evidently there is a succession of emergences through the summer, as we observe moths from May to August, and it is not likely that the life of an individual moth lasts more than a week or two. This fact makes it more difficult to dispose of the moths than if the appearance of the brood was nearly simultaneous, as it is in some species. No moth so enrages the entomologist. When he has spread his sugary compound upon the tree trunks he hopes for rarities, and often beholds instead an eager swarm of Cabbage moths. But gardeners will bless him for destroying some of them.

Certainly the caterpillar is particularly fond of all the Cabbage tribe, and it is not surprising that we come across people who, on its account, refuse to touch Cauliflowers, or any close sort of Cabbage; for, as Mr. Wood remarks, the cook may wash her vegetables thoroughly to appearance, but deep in the heart, much grieved by the salt, yet unable to make an escape, are sundry of the fattest caterpillars, which are fondly cooked with the Cabbage, and eaten. After boiling, indeed, the creature becomes paler, and not very distinguishable. When alive it is brown, yellowish brown, or green, varying somewhat; occasionally there are markings of black and white. It feeds on almost every plant, useful or ornamental, and is busy both night and day; when adult, it descends to the earth for the winter. Just now there is an opportunity of killing many of the pupæ during the digging customary at this season, when it is possible to let poultry run over the ground; they will pick them up by hundreds. Also, they are eaten by mice, and possibly by some carnivorous beetles.—ENTOMOLOGIST.

ARTIFICIAL MANURES.

"A. D.," on page 147, February 17th, after referring to artificial manures being "like patent medicines," says, "Everybody has his own favourites, in which he believes." I quite understand this, as from experience I have found that different soils require different manures; but for anyone to say "it is difficult to show that the world is one whit the better for them" is (in my opinion) a random expression.

I presume your correspondent is, or has been, in a position with a good supply of natural manures at his command, such as poultry manure from the home farm, which is excellent for Vine borders, and cow and sheep refuse from the park, which, when put in a tank of water and a little soot added, makes a good liquid manure; also the manure from stables where the horses are fed on the best food stuffs. A gardener in a private place with the above manures at his command need not trouble himself much about artificial manures.

But what about the market growers, with their acres of glass, who have to buy nearly all their stable manure from contractors in the nearest town, and then probably have to cart it two or three miles? The cost of cartage is enormous compared with the manurial ingredients it contains, for the most soluble portions may have been washed out by adding water to make it weigh heavier. Therefore the market growers do not use more than is essential to supply their soil with sufficient organic matter.

They find it more economical to purchase artificial manures. I use a large quantity, and such experiments as I have conducted and observed have led me to realise the practical usefulness, not "worthlessness" of artificials. Without them market growers could not produce the fine crops necessary to make their business pay now competition is so keen. Common sense is all that is required when applying artificial manures. Mistakes are often made by thinking that as a little does good much will be better, consequently too much is often given, which does harm, and then the grower condemns the manure. There are, I believe, growers now who purchase the separate ingredients, and mix their own compounds, but scientific knowledge is required to do so with advantage.

I hope "A. D." is not so disgusted with artificial manures as to prevent further experiments, but in trying he must be exact in his methods, and take proper notes of the results. In the meantime I hope the up-to-date readers of this valuable paper will keep artificial manures on the brain until they find out the best kinds for stimulating their crops, and helping to exterminate the eelworm. I must congratulate "A. D." and his "gardening friends" on having no experience with this terrible pest; but there are plenty of equally "good cultivators" who have a great deal too much of such unfortunate experience.—A GROWER FOR MARKET.

ON the above subject your correspondent "A. D." (page 147) seems to have "climbed down" considerably. He thinks that if unable to "elevate and instruct," he will "delight and amuse." He began by accusing Mr. Dyke of extravagance in the application of artificial manures, he ends with a feeble joke—"As to killing the eelworm, the latest specific seems to be found in tickling its tail with superphosphate, to make it laugh, then choking it with a big dose of basic slag."

"A. D." evidently lives at an elevation to which no ordinary "grower" can hope to climb—a paradise where the eelworm has never been allowed to enter. "I have had no experience of eelworm, and amongst my gardening friends, who are good cultivators, the same ignorance prevails." What think you of this, Messrs. Abbey and Iggulden? Can we prevail on "A. D." to publish the secret he holds, so that Mr. Dyke and his numerous eelwormy friends may know how to arrive at that blissful state where the eelworm has ceased from troubling, and artificial manure vendors and their "cant" are at rest?

In the neighbourhood where I reside the eelworm has caused an enormous amount of damage, but probably the owners of these establishments cannot be reckoned among "A. D.'s" "gardening friends, who are good cultivators." Now, "A. D.," rather than carp at one who has found a remedy from these evils, let us appreciate all attempts to make the path of the cultivator easier and pleasanter.

The fact that many mixed artificial manures are worthless should be known by this time to all readers of the Journal, but they should also know that without artificials in these days of intensive culture failure will be their lot.—A. B. C.



NATIONAL CHRYSANTHEMUM SOCIETY—ANNUAL MEETING.

THE members of this Society mustered in strong force on Monday evening last at Anderton's Hotel, when Mr. T. W. Sanders occupied the chair. After the Secretary had read the notice convening the meeting, he then presented the annual report and financial statement, and also submitted a statement as to the reserve account.

The CHAIRMAN, in moving their adoption, said that the annual report and financial statement as read out to them by the Secretary represented the work of the past year, and it was for that meeting to say whether the members present considered it to be satisfactory. The motion was seconded by Mr. H. J. Jones.

Mr. J. R. STARLING desired to say a few words before retiring from his post as Treasurer. He had been with them for twenty years. At first they were small in numbers, but the Society had now become so gigantic that it required someone able to give more attention to the duties. He considered he had only been Treasurer in name. What Mr. Holmes had begun Mr. Dean had followed. He reproached neither, but it was not, he thought, the way things should be done. He thought they ought to have paid auditors, and a Treasurer who could do the work. He had always done his duty and given the time he could, but the state of the accounts was not such as he liked to leave or see the Society in. The Society, he thought, was big enough now to have properly appointed auditors and to have the accounts set forth in proper form. He had no complaint to make, and he regretted leaving after being with them twenty years, but could not undertake the duties which must necessarily increase.

Mr. R. DEAN gave an explanation of several items now outstanding, and thought the Committee was justified in saying that the financial position was sound.

Mr. GEO. GORDON felt the finances required careful consideration, and pointed to the rate at which some of the items had grown, making comparisons between 1891 and the past year. He thought the great point was to pay their way before they incurred expense, and it was most important to consider what they were going to do for 1898. The amount to be provided for prizes by the Society at its four shows was £610, while it could not be expected that the income would be very largely increased. As the balance appeared to be so small, he would like to know where the money was coming from. It was a matter that ought to be faced by the members, and as an amendment he moved "That the report and financial statement be referred back to the General Committee, with instructions to prepare a proper balance-sheet, and to prepare an estimate of expenditure for 1898, and to report on the advisability of a reduction in the number of the shows, or in the amount of prize money during the current year."

Mr. J. W. MOORMAN, in seconding this amendment, objected to the statement that the Society was financially sound, and in support of which he said that the gentleman who had been nominated to fill the vacant post of Treasurer would only accept office on condition of the debts being previously paid. Mr. T. BEVAN also supported the amendment, and suggested the necessity for a proper balance-sheet, and thought the meeting should be adjourned till that was done. Another member complained that the financial statement had not been printed for the use of members.

Mr. DEAN, in replying to some of the criticisms, referred to the new schedule for 1898. Though the Society increased in numbers, yet the annual loss of non-paying members was large, and he attributed the increase of prize money to the action of the Schedule Sub-Committee, which, if not checked, would land them in bankruptcy. Mr. W. H. LEES protested as a member of that Committee.

Mr. CHOLMELEY moved that the accounts be printed and placed in the hands of the members at least seven days before the date of the proposed adjourned meeting. That, he ventured to say, was the usual commercial way, and it was not usual to ask for them to be passed without. They might be right, and no doubt were, but he considered he should see for himself. He did not believe the Society was in a position of bankruptcy.

At this juncture inquiries were made as to voting by proxy, but the Chairman pointed out this would involve an alteration of rules.

Mr. SPICER moved that the meeting be adjourned for a month, but finally agreed to three weeks. The auditors would, no doubt, prepare a balance-sheet when they knew the Society wished every liability placed before it. The Committee would also look into the question of what could be done during the ensuing year.

Mr. GORDON'S amendment having become the substantive motion, it was carried, and the meeting was adjourned to Monday, the 21st March, at 6 P.M. There was a long agenda paper, but all other business usually transacted at the general meeting must stand over until the date mentioned.

The interest in the proceedings was keen, but the discussion orderly and dignified.

REPORT OF THE COMMITTEE, 1897.

At the termination of another year's operations, your Committee can congratulate the members upon the steady and satisfactory progress still being made by the Society. Its work during the past twelve months was carried on with energy and success; its resources are as great as ever;

its supporters more numerous; it is financially sound; and its prestige knows no diminution. During the year four exhibitions were held, and, as is usual, they were of a high order of merit. The meetings of the Floral Committee maintain their interest and usefulness, and the societies in affiliation show a substantial increase.

In common with some kindred societies, your Committee took steps to commemorate the Diamond Jubilee of her Majesty the Queen by instituting some special classes, which were competed for at the November show, and proved interesting features. A Commemoration Fund was opened, and a fair proportion of the amount offered as special prizes obtained.

The Jubilee edition of the Catalogue, 1896, is still in constant demand; it has been found most useful by affiliated societies, and it will be gratifying to the compilers to know how greatly it is appreciated. Inquiries are being made as to the probable issue of a supplement; a desire is also occasionally expressed that the publication of a Year Book be continued if possible.

The Classification Committee have held a sitting, and dealt with certain varieties of incurved flowers, defining their proper position. This Committee has sought and obtained from the General Committee larger powers, which will enable them to make from time to time such recommendations affecting the exhibition of plants and blooms which it may appear desirable to adopt in practice.

A sub-committee has been entrusted with the revision of the rules; and after full and patient consideration have recommended material alterations, which they believe will, if adopted, improve the procedure of the Society in several particulars, and bring the rules generally into closer agreement with its practice.

During the year ending December 31st, thirteen Fellows and 114 ordinary members have been elected to the Society, and the number of societies in affiliation have increased by eleven.

An agreement has been entered into by your Committee with the Royal Aquarium Society to hold four exhibitions in the present year—viz., in September, October, November, and December; and the Directors commemorate the fact that the National Chrysanthemum Society has held their exhibitions at the Aquarium for the past twenty-one years, by offering special commemorative prizes at the November exhibition.

The schedule of prizes for the four exhibitions has undergone revision, and a substantial increase in money value has been made in several leading classes. A special class for twelve vases of specimen blooms of Japanese Chrysanthemums has been introduced at the November show, the President, Sir Edwin Saunders, generously giving the first prize of £20.

Your Committee most heartily thank the President, as well as all donors of special prizes at the various exhibitions, as they are frequently the means of bringing out some novel features, adding to the attractiveness of the various shows; and highly appreciate the warm interest Sir Edwin Saunders takes in the work and success of the Society.

Your Treasurer, Mr. J. R. Starling, who has been connected with the Society by membership since 1878, who was appointed Treasurer in 1879, and has held that office ever since, is compelled by ill health to insist upon the resignation of that office he, for the same reason, placed in the hands of the members a year ago. Your Committee also regret the death of Lord De L'Isle and Dudley, one of the patrons of the Society.

FINANCIAL STATEMENT.

We have received a statement of receipts and expenditure, but owing to its hurried preparation and the indistinct pencilling-in of figures we are unable to insure an accurate representation. As we should not like to incur the risk of possible errors appearing, the statement is withheld. This notification is not in the least to be regarded as a complaint against anyone, as we assume all was done that could be done under the circumstances.

DAMPING IN CHRYSANTHEMUM BLOOMS.

ANYTHING pertaining to Chrysanthemums is always absorbed by enthusiastic chrysanthemists (Why not adopt the name? It is expressive, convenient, and far more elegant than the ugly contraction "mummers") with avidity, and perhaps the following note, though unseasonable, may evoke other opinions and throw light on a subject that to me has always been a mysterious calamity—I refer to "damping."

For some years I have observed that one end of my house was always much less subject to the evil than the other, and from this experience I had placed all my most susceptible varieties at that end. I could never reason out why this end should be always so favoured beyond the other, as all other conditions of light and heat were practically the same. I may say that the plants are flowered in a house in which Camellias are planted in open beds, and the house an iron built one, consequently the evaporation from the open beds and the condensed moisture on the metal surfaces make it as undesirable a place for big blooms as could well be imagined.

There is a large cistern underground at each end of soft water, the hole being covered with a moveable flag. I have always grouped the plants over this, at the end to which I refer. At the other end the cistern has always been open and used for watering the Chrysanthemums from, as more convenient and suppositiously better for the plants, while the end which has proved so signally free from damp blooms has been watered from the tap with water which is most decidedly hard. From this I have come to the conclusion that soft water is indirectly conducive to damping. When we consider how seldom a soft water cistern is cleansed, and the nature of the water collected from the house tops in autumn, with its many abominations of decayed vegetable matter, I think it is not improbable that a condition of affairs may arise that is distinctly advantageous to the propagation of this scourge to chrysanthemists.—R. E. RICHARDSON, Wollaton.

CHRYSANTHEMUM LEAF RUST.

I HAD been expecting to see in the Journal correspondence on this subject for some weeks past, and I am therefore very pleased to observe Mr. Abbey's further report in this week's issue. I have purposely waited ere relating my experience since October last, when Mr. Abbey kindly examined the leaves I sent to England, and gave us his opinion on the question. I entirely agree with your correspondent, J. G. Mills (page 151), that it is a matter which deserves serious study and consideration, particularly as it may be considered only in its infancy.

Mr. Abbey tells us there is no evidence of the disease being distributed on cuttings or young plants before the spring of 1897. The American variety Niveus was, I believe, raised in 1893, and cultivated in England in 1894. If the disease were not evidenced till 1897 I suppose we could not saddle the Americans with the origin of the rust, unless it were dormant for two or three years, which I gather from Mr. Abbey's report might be possible.

The apparent "caprice" of the rust is, however, the question that mystifies me at the present time, as the disease reappeared here at the beginning of last month on cuttings received from England in December. It showed itself on about a dozen of these semi-rooted cuttings, and towards the middle of January I observed a few specks of the rust on five or six of my own half-rooted cuttings in a collection of some six or seven hundred. When it is considered that every one of my plants (excepting those grown under glass the whole season) were affected very badly last autumn with the disease, it seems a peculiar coincidence that the reappearance should first show itself on the recently arrived English cuttings.

I have to thank Mr. Abbey for his suggestions and warnings in October last, as I attribute to him the check of the rust for the last three weeks or so—i.e., so far as the naked eye can tell. I treated every affected part with a solution of equal parts of sulphur and lime boiled and applied with a small paint brush. A simple immersion will be found as ineffective as pouring the liquid on a duck's back. I have also since watered and syringed the cuttings and plants with a diluted solution of this mixture, and after a daily close scrutiny no visible trace of rust has appeared. This is, I think, very hopeful, but I recognise the fact that it is too early to draw conclusions. N.B.—If after boiling the sulphur and lime are allowed to deposit, and the clear liquid drawn off, no disfiguration of the foliage takes place when syringing. The Bordeaux mixture I also experimented with, and although apparently effective, I prefer the sulphur and lime for young plants.

With the view of assisting to solve the question of the origin or cause of this disease I should like to point out—

- 1, That all my plants, some six or seven hundred in pots and in the open ground, were affected in the autumn of 1897 with the rust, all excepting some three or four dozen, grown entirely under glass the whole season.

- 2, My plants came from England, America, France and Italy—old and new varieties.

- 3, The disease first appeared in my plants after much rain, and at the same time Raspberry rust showed itself.

- 4, That all the plants were apparently affected at the same time.

I have ventured to trouble you with my experiences on this subject thus early in the year in the hope that they may prove of use to some of your readers, and that the disease may be effectually checked in its career. —HENRY BRISCOE-IRONSIDE, *Pallanza, Lago Maggiore, Italy.*

HIGHGATE AND DISTRICT CHRYSANTHEMUM SOCIETY.

COMMITTEE meetings of the above Society were held on the 11th and 17th ult., when the schedule for the Exhibition to be held at the Holloway Hall on November 8th, 9th, and 10th next was settled, several classes being added to last year's schedule, making up the total to ninety classes. It was unanimously decided by the Committee that the Society should discontinue its affiliation with the N.C.S., and award its own certificates and medals. It was also agreed that certificates should be awarded to new varieties of Chrysanthemums if of sufficient merit. The Judges were also elected.

BELFAST CHRYSANTHEMUM SHOW REFLECTIONS.

I HAVE read with much interest Mr. Beckett's remarks in defence of the above in your Journal of the 17th ult., and again trespass on your space to offer a few further suggestions, as I am responsible for the reflections.

FIRSTLY.—I fully sympathise with Mr. Beckett in disclaiming infallibility as a judge, and quite agree with the editorial remark, "that two judges might have been advantageously employed at this show."

SECONDLY.—Mr. Beckett states, "Far better give an exhibitor the benefit of the doubt than disqualify." Such is usually extended to a criminal in a court of justice, but in this case we find thirteen exhibitors equally expecting that justice would be done. From Mr. Beckett's experience of Yellow Madame Carnot, he probably has another sport. My experience is that it is a distinct canary yellow, and from what I saw of it there, as well as in Edinburgh and other places, and also having seen G. J. Warren exhibited, I consider them too much alike to be termed distinct. The bloom referred to at Belfast had just sufficient primrose colouring to distinguish it from the original Madame Carnot. Making due allowance for fluctuation of colour through "timing of bud," age of bloom, and other cultural points, it will require an authority of greater fame than Mr. W. Wells to transform Mr. Jones' Yellow Madame Carnot into so pale a primrose as that exhibited by Mr. W. Mease at Belfast.

THIRDLY.—I refer Mr. Beckett to Mr. Molyneux's review of new varieties in the Journal of December 9th last, page 558. In this he gives pride of place to Mrs. W. Mease, and describes it as a soft primrose

sport from Madame Carnot. So good was this bloom as shown at the National Chrysanthemum Society's Show last November that it received the premier award as the best Japanese bloom at the show.

FOURTHLY.—Most readers will agree with me that although late I stated a clear case of card-boarding as perpetrated at Belfast. My reason for not lodging a protest at the proper time was: It was only on the second day of the show (then too late to protest) that I had an opportunity of examining the winning stands in the class referred to, and I took my notes during the quiet hours of the morning. I went through each stand in the order of the awards, and when I came to the third prize stand I at once noticed a thin disproportioned bloom of Mutual Friend, and on examination found that it was supported with a circular card-board 5 inches in diameter. On further examination I found no less than thirty-one blooms treated in a similar manner. Mr. Beckett states "that card-board or no card-board, it would have received the same award from any responsible judge." Are we to infer from this statement that he treats "card-boarding" as legitimate?

I will now challenge Mr. Beckett or any other Chrysanthemum expert to publicly state in these columns that card-boarding Chrysanthemum blooms at shows is legitimate, having regard to the regulations of the National Chrysanthemum Society.—PETER BROCK, *The Gardens, Glenmor, Drogheda.*

P.S.—I have read in your issue of 24th ult., page 172, Mr. Mease's explanation of his primrose sport from Madame Carnot being labelled at Belfast as "Yellow Madame Carnot," announced by some to have originated with him a year ago as a root sport, and this year remained perfectly true. I did not intend to further trespass on your space, but as my last letter on the subject is not yet published, I beg to ask the insertion of the following.

Doubtless Mr. Wells thought he was doing right when he directed Mr. Mease's assistant that the bloom should be labelled correctly as exhibited at Belfast, "Primrose sport from Madame Carnot." But he probably did not know the terms of the schedule until the protest was lodged against the stand on account of this bloom, the variety not being in commerce. The practice of re-labelling blooms at shows by such eminent experts is, to say the least of it, far from becoming, as we now have in commerce Mrs. W. Mease. It was apparently only after the shows were over that they could distinguish it from Yellow Madame Carnot as introduced by Mr. H. J. Jones. Having regard to these facts, all fair-minded men will agree with me that, much as I regret any remarks I have made, under the circumstances they have been quite justifiable.

COLLARETS FOR CHRYSANTHEMUMS.

Referring to "Sadoc's" remarks *re* collarets for displaying Chrysanthemum blooms, he may be interested to learn that the Ulster Horticultural Society adopted as its rules the rules and regulations of the National Chrysanthemum Society. Having regard to this fact, how are collarets permissible? Apparently special rules will have to be drawn up against their use, or let every exhibitor meet on level terms and use his discretion as to how much support he will employ further than the cup at present prescribed by the National Chrysanthemum Society. This is a matter which Chrysanthemum show committees should take timely notice of, and adopt such rules as they think best suited to promote the interests of fair and honourable competition, and thus prevent a recrudescence of what appeared at Belfast to be a pernicious practice. —P. B.

LEEKES AND SIZE WORSHIP.

It is not the weight of Leeks and thickness of their stems alone, *plus* purity of blanching, that constitute their value; but the length and uniformity of the blanched parts is an important factor in the case. Great credit was due to Mr. Henry for his weighty achievements recorded on page 169, where "H. W. W." scores a point, and is congratulated. Everybody cannot always be right in everything, and if nobody I have seen has grown Leeks on the Celery-earthing system good enough for me, it is clear that they have been so grown, and perhaps will be again, good enough for some judges at shows.

Short, fat, semi-bulbous Leeks of extraordinary thickness appear to be preferred by certain judges, though not all, to equally pure but thinner stems, uniform throughout, of twice the blanched length and with no suspicion of a bulb. Many old growers do not agree with modern verdicts on the above basis. Let the two types of Leeks be cooked—the short and thick by earthing them above ground, and the relatively thinner stems which have elongated within it, as the result of deep planting in deep and generously enriched soil.

There are not many cooks or Leek consumers with educated palates who would pronounce the much-swollen dumpies "good." The smaller in girth, grown in the good old way, are invariably better when put to the ultimate test. That, however, is not the exhibition test. The eye and not the palate is the dominating power there, and likes to be well filled, hence the bulky Leeks, Onions, Potatoes, Cabbages, and other vegetables which have so often received high honours over products more refined.

If the bigger were, as such, the better, why not carry size worship to its logical issue and choose judges by circumference, with weight? The tall and thin, also the good little men—of whom there are so many—would then give show committees no concern in selecting from them, though these might, perhaps, give just a little trouble in return by judging through the Press, for there are, happily, not a few who, if "in stature small, are in determination great."—A SMALL OLD GROWER.



WEATHER IN LONDON.—Very changeable weather has visited the metropolis during the past seven days. On Thursday and Friday, until the evening of the latter day, when it rained heavily, it was fine, as also was Saturday, the mornings of each day being very frosty. Sunday was a wet day, though there were occasional glimpses of sunshine during the afternoon. In the evening it cleared, the stars shining brightly, and was followed by a sharp white frost on Monday morning, which day was clear and cold. There were very heavy showers on Tuesday, but Wednesday opened clear and cold.

— WEATHER IN THE NORTH.—During the last week of February the weather continued very unsettled—rain, sleet, snow, frosts of from 7° to 11°, and bright sunshine, with occasional high winds, following with short permanence of any. Saturday, with sleety showers, was very disagreeable in the former part; the afternoon improved, but much rain fell during the night. Sunday also brought cold showers, but Monday was brighter, with 2° of frost in the morning. March entered with heavy showers of snow, alternating with gleams of sunshine.—B. D., *S. Perthshire*.

— ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, March 8th, in the Drill Hall, James Street, Victoria Street, Westminster, 1 to 4 P.M. A lecture on "Some of the Plants Exhibited," will be given by the Rev. Professor G. Henslow, M.A., V.M.H., at three o'clock. The Committees will meet as usual.

— ROYAL GARDENERS' ORPHAN FUND.—A meeting of the Committee was held on February 25th, Wm. Marshall, Esq., being re-appointed Chairman for the ensuing year. The guardians for the children elected at the recent meeting were appointed, the mother in most cases undertaking the duties. Authority was given to draw cheques for their payment from date of election. The following special donations were announced—viz., M. Todd, Edinburgh, sale of cut flowers, £30 10s.; H. J. Jones, Esq., Lewisham, boxes at his show of Chrysanthemums, £14 3s. 1d.; J. Gammie, Chiswick, £5 5s.; H. Eekford, Wem, £2; B. Marks, Hardwick, box, 10s.; A. W. G. Weeks, box, 10s.; Jones and Sons, box, 9s. 3d.; J. Hamilton, Byrkley, box, 8s.; J. Pearce, 6s. 6d.; Hook Cottage Gardeners' Society, box, 12s. 6d.

— HALL FOR HORTICULTURE—PROVINCIAL GENEROSITY.—My remarks on page 176 of last week seem to appear at an opportune moment, for we read of the magnanimity in matters horticultural shown by Mr. Henry Yates Thompson of Liverpool in a handsome provision of £6000 for a second Palm house after one of double that cost having been previously granted by the same public spirited benefactor to another Liverpool Park. I should not like to imply that because London is some ten times larger than Liverpool, the proportional equivalent should be justifiably anticipated for London magnificence. The reminder supplied by the said gifts should, however, quicken generosity by others for this metropolis, not, however, without the horticultural societies making earnest in helping themselves, as I indicated last week, so as to deserve support for the creation of the Central Hall for Horticulture.—H. H. R., *Forest Hill*.

— THE WALKER PROMENADE, GATEACRE.—A gift of importance to the residents in this pretty suburban village, which is visited by numbers of the Liverpool inhabitants during the summer, is the handsome promenade in honour of the Diamond Jubilee, which has been constructed at the sole expense of Colonel W. Hall Walker, a son of the late Sir Andrew Barclay Walker, Gateacre Grange. For years the footpath has been narrow and inconvenient, but, thanks to the generous donor, a new promenade of some quarter mile in length has taken its place. This has necessitated the removal of the old boundary wall and hedge, and the erection of a new boundary. This stands back in the field, and consists of a stone wall surmounted by a 4-foot oak palisade. The average width of the footpath is about 24 feet. A fine row of old forest trees has been carefully preserved, and will lend a charm to the appearance during the summer months. Some large Elms have wisely been topped, and altogether the solid stone foundation, covered with limestone chippings, extending from the station past the church, cannot fail to become the highly popular resort that Colonel Walker intended it should be.—R. P. R.

— KEEPING APPLES.—A cool dry cellar is an excellent place to preserve Apples in good condition until the present time. I recently saw some good examples of Blenheim Orange, King of the Pippins, and Striped Beefing which had been stored in a cellar of the above description. A damp ill-ventilated cellar would naturally be detrimental, and a too dry arid atmosphere tends to shrivel fruit.—E. D. S.

— PLANTING HORSERADISH.—The ground on which Horseradish is to be planted ought to be trenched 2 feet deep at least. Manure, if added, should be placed at the bottom. Roots of the thickness of the little finger and about 12 inches long with a crown attached are the best for planting. Discard those with more than one crown. Break off any small roots issuing from the principal root. An open sunny position is the best, but Horseradish will succeed in less favourable situations, but avoid planting under the shade of trees or in competition with their roots.—S.

— CARDIFF HORTICULTURAL SOCIETY.—The ninth annual general meeting of this Society was held in the Town Hall recently, some thirty members being present. Mr. W. C. Peace occupied the chair. The accounts for the past year were duly considered and adopted. The chief matter for discussion was as to the date of the next show, and it was felt that owing to the large number of absentees in August a change was desirable, and it was ultimately decided to hold the show on July 20th and 21st, which is some three weeks earlier than usual. It is to be hoped the change will prove beneficial.

— EARLY POTATOES—SUTTON'S A1.—Our correspondent "H. D.," in his useful article on page 118, February 10th, observed, "It is a pity that Messrs. Sutton & Sons are not able to offer seed (of A1) this season, as it is one of the good things which everyone is trying to get." The writer of the article must have had last season in his mind. This year we are informed there is an ample supply, and there is an excellent illustration of the variety on page 72 in Sutton's "Amateurs' Guide." Our correspondent is usually as wide awake as most gardeners, but he has allowed himself to be caught napping for once.

— CHESTER PAXTON SOCIETY.—At the usual fortnightly meeting, held at the Grosvenor Museum on Saturday, Mr. A. T. Gillanders, High Leigh, delivered a lecture on "Forest Entomology" to the members, who were present in goodly numbers. The lecturer dealt in a comprehensive manner with the life histories of the gall mites, sawflies, beetles, and other insects, often so injurious to forest trees, and gave valuable hints as to the best means of preventing these pests from doing damage. The lecture was copiously illustrated with lantern slides, at the close of which Mr. Gillanders was accorded a hearty vote of thanks.

— PRESENTATION OF THE ALBERT MEDAL TO MR. G. J. SYMONS.—Prior to the departure of H.R.H. the Prince of Wales from Marlborough House, the Council of the Society of Arts attended there, when the Prince, as President of the Society, presented the Albert medal to Mr. George J. Symons, F.R.S., "for the services he has rendered to the United Kingdom by affording to engineers engaged in the water supply and the sewage of towns a trustworthy basis for their work, by establishing and carrying on during nearly forty years systematic observations (now at over 3000 stations) of the rainfall of the British Isles, and by recording, tabulating, and graphically indicating the results of these observations in the annual volumes published by himself."

— A STRANGE THEORY.—There is a good deal that is, to say the least of it, curious in regard to plant life, which never finds its way into the pages of horticultural journals, and a highly popular weekly paper recently advanced a theory about trees feeling the effects of tides. It appears that a Vine grower in Italy is responsible for the idea, and has come to the conclusion after fourteen years' experimenting that the sap of a living tree ebbs and flows in some way in sympathy with the tides of the ocean. According to the account this theorist stated that no tree should be pruned except during the hours of ebb tide. We conclude, of course, that he lives in close proximity to the sea, as no provision, so far as we know, is made for trees and cultivators growing and living 100 miles inland, where little generally is known of the ebbing and flowing of the tide. What is still more remarkable in connection with this theory is that the trees and Vines of this grower and ebb-tide pruner develop splendid foliage, bear heavy crops, and are quite free from the attacks of insects, which spread devastation in the neighbourhood. It seems strange that a course of treatment which insures heavy crops of fruit, and renders trees proof against attacks of insect pests, should be known so little of in gardening circles. That experimenting Italian grower would be a public benefactor if he could prove the truth of his theory to English fruit growers. Perhaps some other reader of the Journal has heard something of this ebb-tide pruning.—H.

— **PRUNUS PISSARDI.**—I have this beautiful Japanese Plum at present in full blossom, a month before its usual time, notwithstanding the recent visitation of frost. I fear it comes much too early in this country to permit of its developing its flowers into fruit, for the hail showers of March are usually very destructive. It is, however, by reason of its beautiful foliage, a highly decorative Eastern tree. It is especially attractive during the late autumnal months.—**DAVID R. WILLIAMSON.**

— **WINCHESTER GARDENERS' ASSOCIATION.**—At the last monthly meeting, on the 22nd ult., through the Hants County Council, Mr. G. Garner of Cadlands Park, Southampton, gave a very instructive and practical lecture on fruit culture under glass. He treated on the Vine, Peach, Nectarine, Strawberry, and Melon, giving hints as to aspect, soil, and general treatment of the several kinds. He was handicapped in not being able to treat the subjects in two or more lectures. A hearty vote of thanks brought one of the most instructive meetings of the winter to a close.

— **EFFECT OF RAIN ON PLANTS.**—**M. Wiesner** has come to the conclusion that the injurious effects alleged to be produced, even by tropical rain, upon leaves and flowers have been greatly exaggerated. He never observed any splitting or tearing of leaves or petals even by the heaviest rain, unless accompanied by a strong wind. When flowers or leaves are bodily torn away by rain it is only when their tissues have already undergone the change which makes them ready to fall. The immunity from the effects of heavy rain is due to the elasticity of the flower or leaf stalk. If these are fixed so as to have no power of movement the impact of a falling body far less than the weight of a heavy drop of rain has a destructive effect on the leaves or petals.—(*"Pharmaceutical Journal."*)

— **POTATOES AND THEIR CULTIVATION.**—**Mr. W. R. Baker**, gardener to Lady Duckworth, Knightleys, contributed an excellent paper on "Potatoes" at the meeting of the Devon and Exeter Gardeners' Association at the Guildhall last week. He referred to the fact that two Devonshire men—Sir Francis Drake and Sir Walter Raleigh—shared the honour of having introduced the Potato into this country. He said a change in Potato seed occasionally was very desirable, as, no matter how good the sort, it was liable to degenerate in time. For thin, light, sandy soil he should use cow manure; and in wet, heavy soil, which was the worst for the Potato, he should use horse manure and good hot lime. In very heavy, wet soil he did not think that lime, guano, and wood ashes could be beaten. About the 20th March was quite early enough for planting, but the seed should be nicely sprouted by storing of each tuber on its base so as to retain the strong central sprout. Four or five shoots on a tuber were too many. He was convinced of the injury resulting from the loss of the premier sprout. The best remedy for scab was chimney soot. A typical collection of the leading kinds of Potatoes now in cultivation were exhibited, and their merits pointed out and commented upon.

— **ANOTHER VALUABLE GIFT TO LIVERPOOL.**—For several years past the Parks and Gardens Committee of the Liverpool City Council has been working manfully to keep pace with the times in the matter of securing open spaces, and although somewhat adversely criticised, the general public must acknowledge the many lasting benefits that are in evidence on all sides, and the bright appearance of the trees and shrubs. There is no doubt that the work of the Committee has left its stamp in the minds of the wealthier of Liverpool's citizens, judging from the fact of the grand playground which was presented to Wavertree by an anonymous donor, and of the magnificent Palm house in Sefton Park, equipped in every way at a cost of £12,000, and presented by H. Yates Thompson, Esq. Now, through the kindness of Mr. Thompson, the residents in the northern part of the city are to be similarly treated by the erection of a house some 120 feet long, at a cost of £6000. This fact was notified at a meeting of the Parks and Gardens Committee held last Wednesday under the presidency of the Chairman, Alderman Joseph Ball, who was supported by the Lord Mayor (Alderman Jno. Houlding), Mr. Yates Thompson, and Mr. Mackenzie, of the firm of Mackenzie & Moncur, the celebrated horticultural builders of Edinburgh. The announcement of the gift was enthusiastically received. Alderman Ball, on behalf of his colleagues, thankfully acknowledged the generous offer of Mr. Yates Thompson, which he was sure the Lord Mayor and Corporation would be delighted to accept on behalf of the citizens. From the plans submitted, the new house will form a great attraction in every way, the design being extremely handsome. It will be situated at the north side of the park, near the bandstand and terrace. As in the case of the Sefton Park building, the contract is entrusted to Messrs. Mackenzie & Moncur of Edinburgh.—**R. P. R.**

— **BEETROOT.**—**Sutton's Blood Red Beet** produces roots of medium size and of a rich dark colour. **Pragnell's Exhibition Beet**, when well grown, is not easily surpassed for handsome form, suitable size, and attractive colour, though not so deep as the preceding variety.—**E.**

— **RIVINA HUMILIS.**—Not long ago I came across a number of these berried plants in good condition. They are rarely, however, met with, in spite of the fact that they are among the most useful of warm greenhouse plants. At almost any time of the year the beauty of the racemes of highly coloured fruit may be enjoyed, and they are extremely useful for various kinds of decoration. The propagation of *Rivina humilis* is simplicity itself, as they are readily raised from seed which germinates freely in heat. Firm potting of the plants is essential to obtain a good set of fruit, and during the flowering period a position close to the glass is advisable to encourage setting. A stove temperature is best while the plants are in bloom, after which they should be removed to a cooler house, otherwise the fruit is apt to fall.—**H.**

— **HEAVY POTATOES.**—At many local flower shows a still popular class is that in which prizes are offered for the heaviest dish of Potatoes. Weight is the only point aimed at, and no matter how ugly and malformed the tubers, those that are heaviest win premier honours. Surely this is not the way to encourage quality among small growers, and quite inconsistent with all good teaching. It may be urged that it is only a novelty; but whether or not, the chance of winning a prize at the show is an inducement to working men, and is an encouragement for them to grow a gross unprofitable variety of Potatoes for the sake of getting first prize in the heavy dish class. As committees are now framing schedules for the ensuing season they will do well to consider this point, and spend the prize money in a direction that will encourage growers to use their endeavours to produce the best and not the heaviest Potatoes. The R.H.S. judging rules give hints on this subject that may be followed with advantage.—**V. T.**

— **SHIRLEY GARDENERS' ASSOCIATION.**—The monthly meeting was held at the Parish Room, Shirley, on the 21st ult., the President, Mr. W. F. G. Spranger, presiding, but owing to the inclement weather there was scarcely an average attendance of the members. Mr. E. T. Mellor, B.Sc. (Lond.), Lecturer in Biology to the Hartley College, Southampton, gave his second lecture on Fungi, entitled "Injurious and Beneficial Fungi." By means of lantern slides the life history of *Peronospora infestans* was given. Wheat rust was also shown to be a great scourge, Australia having lost £2,500,000 in one year by its ravages. The tubercles on all leguminous plants were typical of the beneficial Fungi. A brief discussion ensued on the best methods to lessen the evil caused by the injurious Fungi, the lecturer recommending the burning of the waste of all garden crops, thereby destroying the resting spores. A vote of thanks to the lecturer and to the President closed the meeting.

— **THE DROITWICH EXPERIMENTAL GARDEN.**—The Worcester Union of Workmen's Clubs and Institutes having assistance from the County Council in the town of Droitwich, are to be congratulated on possessing a capital county experimental garden, and the superintendence for it of so excellent an horticulturist as is Mr. James Udale. There lie before me reports of the work done in this garden for the past two years, and it is worthy of note that last year's report is double the dimensions of its predecessor, showing how the work and uses of the garden is growing. It is two acres in extent, but that is ample for all present purposes, and contains some forty-eight varieties of Apples in various forms of training, and Pears, Plums, Cherries, bush fruits, and Strawberries in less variety. During last year nine distinct kinds of vegetables in thirty-five varieties were tested, besides numerous small things, with respect to all of which complete information is furnished. Very complete tables are furnished as to the form of tree, season, and style of pruning, time of opening bloom, gathering of produce, quality of crop and weight. It is interesting to note that the Potato Up-to-Date shows well in the produce table of varieties for the best crop, although for some reason or other the Garton, a variety of great repute in some districts, but not at all so in the south, is valued relatively higher than the preceding, although its relative produce is some 20 per cent. less. Mr. Udale refers in warm terms to the excellence of Homo rape meal manure, spread well over a large bed of Carrots, as having saved them from the wireworm when in danger of being decimated. Naturally the report has most local interest, but it is instructive to find such a garden as this maintained in any county. Would that all counties had a similar one as intelligently managed, it is capable of rendering great service to the county. I notice that during last year no less than 991 persons visited the garden, conclusive evidence of the interest taken in its contents.—**A. D.**

— **ANCIENT FLOWERS.**—Well preserved flowers, which have recently been discovered in Egypt, concealed within tombs of the earlier Pharaohs, have been placed in the Cairo Museum. The commonest of these were white and blue Lotuses, red Poppies, leaves and flowers of Pomegranate, of Saffron, and other species of Crocus. It seems that the flowers of to-day are the same as flourished then, and even the Chrysanthemum had made its appearance in Egypt some 5000 or 6000 years ago.—("Christian World.")

— **THE MARGUERITE FLY.**—If we could banish the Marguerite fly from attacking the plants when in bloom, or at other times, these useful plants would become still more popular. Nursery growers complain of their attacks, and recommend soot in the compost used for potting. Soot water applied to the roots when the pots are full of them is as good a stimulant as anything, and will tend to ward off the flies. Abundance of light and air for the plants while growing assists in building up a stout epidermis through which it is not easy for the flies to pierce.—E.

— **LEAF-MINING PESTS.**—These troublesome pests have always been a nuisance to gardeners. The smeared tin remedies advocated by Mr. Abbey are doubtless good, but would they not be rather unsightly in an ornamental plant house or conservatory? It is at the time the Marguerites are blooming that the small flies deposit their eggs in the leaves. For Celery, however, the plan seems an excellent one, and, to my mind, worthy of adoption. These flies seem the most prevalent in wet seasons, and in damp positions or in the vicinity of trees. I believe, too, that sour leaf soil has something to do with encouraging their increase.—S.

— **PHILLYRÆA DECORA.**—During the last few years this plant has become deservedly popular as an evergreen shrub, and will doubtless continue to advance in favour as its merits become more generally known. Owing to the fact of its having a good natural habit, coupled with fairly rapid growth, it is gradually ousting the Laurel from many places. For positions where a good evergreen shrub is required that will grow quickly, but not wildly, and does not root further than its own radius, this will be found suitable. The habit is sturdy and compact, and it does well in almost any position if given good soil. It roots readily from cuttings of half-ripened wood, inserted in sandy soil in a cold frame during summer. Occasionally it is met with grafted on Privet stocks, but this is objectionable, as it both grows better and lives longer when on its own roots. In trade catalogues it is usually met with under the name of *P. Vilmoriniana*.—D.

— **THE NATIONAL AMATEUR GARDENERS' ASSOCIATION.**—We are glad to see by the report and statement of accounts that this popular organisation is in a sound and satisfactory state. The accounts are admirably clear, and the business of the Association seems to be transacted with great circumspection. It has influential patrons, able officials, and a zealous working committee. Several affiliated societies are registered, and a diversified library is established. Papers are read on well chosen subjects at the different meetings, and amateurs' exhibits arranged, for which merit marks are accorded, the greatest annual aggregate securing medals or winning a place in some of the several challenge trophy contests. The number of members does not appear to be given, but this must be considerable, and the Association seems to be very much alive. A tabulated list of qualified judges selected by the Committee for thirteen different subjects is rather interesting. Out of the total number of twenty-nine two are announced as capable of judging everything—Mr. L. Brown and Mr. J. W. Jones. They certainly ought to have a medal. Messrs. D. B. Crane and B. G. Sinclair only fail in one thing—Cacti and succulents. They should make good this small deficiency. *Per contra*, five judges are presented as equal to only one subject each—great specialists no doubt. Fourteen members are starred in the two columns "Fruit" and "Bush Fruit," but two of those in the second column seem to have been voted out of the first—on the ground, perhaps, that the subjects, as including Apples and Pears, might be too large for them. They must strive for the odd star. Five judges only are up to date in Cacti and succulents, and six in Carnations. Nine are great on Roses, ten each on vegetables and Orchids, eleven on Dahlias and Violas, twelve on Chrysanthemums, thirteen on greenhouse plants, and fourteen on hardy flowers. Then comes a fall to four under the heading "general," and these, as might be expected, composed the distinguished quartette first mentioned. All honour to the four generals of the National Amateur Gardeners' Association. Such elections impart interest and variety to the meetings, which are admirably conducted under the presidency of Mr. T. W. Sanders, and the proceedings accurately recorded by the Honorary Secretary, Mr. Leonard Brown. We wish for the Association increasing prosperity.

— **WEATHER IN NATAL.**—Writing from Maritzburgh, under date February 5th, a correspondent gives us to understand that the weather there in December and January has been warmer than the very mild term that we have experienced. He says: "At Maritzburgh we had ten weeks of excessive drought, and now we have had sixteen days of rain. The temperature five times in five weeks reached 106° in the shade, and several times 95° to 100°."

— **EXPERIMENTS WITH TOMATOES AND POTATOES.**—I notice that your correspondent, "R. P. R.," gives an account of experiments with the above on page 146. In regard to the Tomatoes, growers would no doubt be interested to know the methods by which the plants were grown, and whether on the whole there was any advantage in point of earliness and yield in raising plants in the previous autumn and winter than in raising say in January. The question of earliness in Tomatoes is one of importance to market growers, and experiments that will decide the most economical means by which Tomatoes may be placed in the market at an early date will be of general benefit.—H.

— **STRELITZIA REGINÆ.**—Among the many gorgeous-coloured flowers which have their headquarters in S. Africa, this stands out conspicuously. Although it has been in cultivation in this country for about a century and a quarter, it is not by any means a common plant. Its large, handsome, glaucous foliage would be a sufficient reason for its inclusion in a collection of intermediate house plants, were it not for the beauty of the flowers, which are the chief attraction. The flowers are produced several together on scapes 3 to 4 feet in height, and are brilliantly coloured, the outer portion being orange, the inner dark blue. The curious shape of the flowers, together with the striking contrast of colour, had led to this plant being sometimes called "The Bird of Paradise Flower." Two large plants, carrying seven and nine spikes respectively, are to be seen in flower in the Winter Garden at Kew.—D. K.

— **LIBONIA FLORIBUNDA.**—This old-fashioned winter-flowering plant seems to have lost a good deal of its popularity, as it is not often met with nowadays. It is of easy culture, and compact bushes clothed with bright red and yellow flowers are pleasing in room or conservatory, while the flowers are useful for cutting. *Libonia floribunda*, however, will not endure gas, and placed in rooms lit with it the leaves soon turn yellow and fall off. It is advisable to raise a few fresh plants annually, and the present is a good time to propagate from cuttings. The old plants should be cut back after blooming, and placed in a warm house to encourage fresh growth. During the summer *Libonias* will stand outdoors, and if frequently syringed to keep down spider little difficulty is experienced in obtaining good specimens of this old-fashioned winter-flowering plant.—G.

— **CAMELLIAS.**—The notes by "E. R." on this charming old flower, on page 110, were refreshing, as Camellias during recent years have lost much of their popularity. Fashion in plant life, as in everything else, ebbs and flows, and through its whims one flower comes to the front and another sinks to the background. We remember when the Camellia was the favoured flower for personal decoration, and very much in evidence in the ball-room. Then Dame Fashion said it was stiff, scentless, and artificial looking, and straightway demanded something more light and elegant. The demand was complied with, and the result was that admirers of the Camellia turned their attention to other flowers. So useful and accommodating are the numerous varieties of Camellias, that we cannot, nor would not, dispense with them, and on this account the practical hints of your correspondent will be of service in spite of the fact that it was a trial to his courage to approach the subject.—FASHION.

— **BIRMINGHAM GARDENERS' ASSOCIATION.**—At the usual fortnightly meeting, held on the 21st ult., Mr. W. B. Latham presiding, Mr. B. W. Colebrook read an instructive and comprehensive paper entitled "Express Grape Growing." The essayist's paper teemed with interesting information as to the initial cost of vineries, the treatment of the Vines and their fruit, as well as of the compost. According to Mr. Colebrook's estimate, Grape growing must pay remarkably well. He did not, however, claim a long life for Vines grown on the "express" system, inasmuch as the heavy cropping would in the course of about ten years materially weaken, to the extent that it would pay better to destroy them, and make new borders and plant young Vines. The essay was rendered additionally interesting by accompanying photographs, representative of the fine crops of excellent Grapes grown on the system advocated. An interesting discussion followed, in which references to the prevention and eradication of insect and other pests and maladies formed the chief topic. Mr. Colebrook also gave a list of about a dozen Grapes he could recommend to be grown for general purposes and for sale, such as Black Hamburg, Muscat of Alexandria, Gros Colman, and Black Alicante as the principal varieties.

AN OLD READER'S JOTTINGS.

IN springtime, when hosts of plants are being raised for bedding purposes and vegetation in glass structures is developing rapidly, every inch of space is usually fully occupied, and under such circumstances overcrowding is not easily avoided. The result of growing two plants in a space only large enough to grow one well is painfully apparent where such a practice is followed; but in many instances gardeners are expected to produce so much in a little space that it requires the ingenuity of a "genius" to achieve results satisfactory to all parties.

Sometimes the season favours those who are placed in such difficult positions; they are then able to place many of their bedding plants in rough frames at an early date, and when May comes round they glory in their dwarf vigorous "bedding stuff." The following year perhaps the spring is a severe and changeable one; the plants then have to be kept crowded in the houses till they become "leggy," and the employer wonders why his gardener cannot grow dwarf plants. Some owners of gardens are considerate enough to listen to reason in the matter; but others, unfortunately, demand their "pound of flesh" without explanation. At various times I have met with cases of the latter description, when the gardener's task has been a most unenviable one; but it is satisfactory to find that as the owners of small gardens begin to understand more about gardening they can see for themselves that results must be judged to some extent by the means at command; and when the gardener is also able to put things in a clear way little improvements often result, hence the reason why the rising generation who follow Adam's calling should learn to express their thoughts clearly by the aid of tongue or pen. Thanks to the guiding spirit of "our Journal" we have now "The Young Gardeners' Domain," in which the "thinking workers" of our gardens can the better equip themselves for the stern battle of life. The seed they are sowing now will in due time bring reward.

It is strange how erratic our thoughts sometimes are. I began this note with the intention of keeping to practical work, but now find I have wandered into musings, though perhaps not without supplying some "connecting links" between seasonable work and contemplation. Let me now advance a few practical remarks as to how the temptation to overcrowd plants may be combated. Fortune in regard to weather seems likely to favour us this season, and if the mildness of winter is followed by a genial spring, bedding plants will need placing in cold pits or frames at a comparatively early date. Experienced gardeners are generally extremely cautious about doing this before the end of March or early in April, but by the exercise of a little judgment in regard to the weather, as well as keeping a sharp look out for frosty nights, an immense advantage may be often gained by placing strong plants in frames early in March. Those who have but few glass structures are thus enabled to grow well numbers of bedding plants raised from seed sown in January or February, for, by being able to give them the necessary space, they develop into good plants instead of weak ones, such as overcrowding is bound to produce.

It has often struck me that very few gardens are provided with a sufficient number of cold pits; their utility in springtime needs no pointing out, and throughout the summer and autumn months they can always be turned to good account. It is, perhaps, during the few weeks which precede the beginning of spring that the greatest difficulty is experienced in finding room for plants; but a little ingenuity displayed overcomes many obstacles. A temporary shelf fitted here and there, even at the risk of appearances, helps to forward young seedlings, which later on do well enough on ordinary stages. Pelargoniums which are growing freely at the points should have the centres nipped out; then, although they may be packed somewhat closely together, they do not draw until the young shoots have fairly started, then the time has arrived when more space is absolutely necessary if sturdy plants are to be produced. The stopping just tides over the difficulty during the few most pressing weeks. Simple though this little detail is, it is not the less important, for if we could only accurately ascertain how many bedding plants in Britain annually become spoiled through neglect of timely stopping, the figures would, I think, be startling.

For several years I have followed the practice of placing Pelargoniums in pits and frames much earlier than many gardeners in the same neighbourhood, and I have never had reason to regret doing so. The Ivy-leaved section is the first to be dealt with, and the cool treatment suits them admirably; indeed, when the weather is favourable they seem to thrive better in pits than in houses, and suffer less from the attacks of green fly. The strong plants should be picked out first, and be given as much space as practicable; while the weaker, if arranged by themselves, are not likely to get overwatered, or checked by the growth of stronger plants around them—a point worthy of note in plant culture generally. Zonal Pelargoniums may safely be placed in cold pits shortly after the time when the Ivy-leaved section are found to thrive in similar positions. If possible the opportunity of removing them to pits should be taken

advantage of in bright weather, as damp is usually more likely to injure them than cold, when wet days—accompanied by a low temperature—follow in succession for a considerable time.—AN OLD READER.

NOTES ON ALPINE FLOWERS.

(Continued from page 87.)

CROCUS SIEBERI.

SIEBER'S Crocus is a charming little species, suited either for the border or the rock garden. It is, perhaps, even more appreciated among the alpine flowers than in the border, and its blooms are not so liable to injury and disfigurement as on the level. Its earliness of habit is a great recommendation, and adds much to the favour with which it is viewed by the alpine grower. What is more, it is by no means difficult to grow, as any moderately light soil will enable it to thrive. The early date at which it flowers makes it desirable, however, that it should have a sunny position, so that its little purple flowers may have an opportunity of expanding at their proper season. The colour is described as bright lilac, but the writer prefers to call it light purple, although this is variable. The anthers and filaments are orange, and the stigmata orange-scarlet. According to Mr. George Maw, *Crocus Sieberi* is abundant at high elevations on the mountains of Greece, the Morea, Eubœa, Crete, and the Cyclades. The same authority also says that it flowers in cultivation "about the end of February and early in March," but it often anticipates this, and in the current year flowered about the second week in January. The corms are low in price, although not so cheap as the Dutch varieties of *Crocus*, and ought to be planted as early in autumn as they can be procured.

SANGUINARIA CANADENSIS.

The Blood-root is an exceedingly pretty early flowering plant, which if procured at once will probably flower this year. There are several specific names applied to what may be considered the same plant, but there is also a distinct, large-flowered variety named *grandiflora*, which is more desirable than the typical plant. There is also a variety named *multipetala*, which can be had by those who wish something rarer than the other forms. There is also said to be a double form, but it is doubtful if this is obtainable at any nursery. The Canadian Blood-root delights in a light peaty soil, and some recommend a shady position—a prescription with which the present writer is not disposed to agree, as he finds the flowers more attractive when in a sunny position. They are pure white, and in sun open out quite flat. A large clump of the variety *grandiflora* thus presents an exceedingly pretty appearance when fully open.

The flowers are at first curiously enveloped by the leaves, which unfold themselves when the blooms are past. The leaves are of a pretty glaucous colour. *S. canadensis* is increased by division, and ought not to be left too long out of the ground before replanting. In the rock garden the best place for the Canadian Blood-root is a rather moist spot at the base of the rockery. It is one of the Poppyworts, and has one of the defects of many of the plants included among these generally showy flowers. This is the somewhat fugacious character of the blooms, but it is not so pronounced in the case of the Blood-root as in some others.

ERINUS ALPINUS.

The *Erinus* is a favourite little plant which, unfortunately, some are not able to retain in their gardens and rockeries. It makes a good wall plant when established from seeds, but is only otherwise suitable for the rock garden. Its chief enemies seem heavy winter rains or showers of sleet followed by frost. In a wet winter many plants are thus lost. The Alpine *Erinus* is a native of the Alps of Europe, and in cultivation generally flowers in May and June. The flowers of the type are purplish-crimson, and there are also rose and white varieties which form a pleasing change. It is increased by means of seeds, which are produced freely. In gardens where the old plants die off it is desirable to encourage the production of seeds, so that a succession of plants may be secured by means of self-sown seedlings. A writer on alpine flowers says that it seeds so profusely that if once established on a rockery there is little or no danger of its disappearing. Many persons do not find this correct in their cases, although the present writer has no reason to complain, as not only are there many seedlings produced, but older plants live and flower for years. Old brick rubbish is recommended for mixing with the soil.

HOMOZYNE ALPINA.

This is a little *Tussilago* which some admire on account of its neat habit, the prettiness of its leaves, and the character of the flowers. In some gardens, such as that of the writer, it does not possess the way-faring habits it shows in other soils, and spreads very slowly, so much so, indeed, that it makes hardly any increase. One does not regret this, knowing how freely, or rather rampantly, the fine *Tussilago fragrans* encroaches upon the ground within its reach. As indicated, it is a *Tussilago* in its appearance, and was at one time included by botanists among these plants, whence the name of *Tussilago alpina*, under which it is often seen. It is rather a shy bloomer in my garden, and is most valued for its pretty leaves as a carpet to bulbous plants. It is increased by division, and is readily obtainable from nurseries growing alpine flowers in quantity. Although not one of the choicest of flowers, it has its merits, and one of these is its ability to thrive in partial or almost entire shade.—ALPINUS.

CHEMISTRY IN THE GARDEN.

(Continued from page 604, last vol.)

WE saw in our last article that farmyard manure contained many things valuable to plants as food, but it is very hard to convince some growers that artificial fertilisers may be used to supply crops with the same ingredients. Let us, therefore, examine this part of our subject carefully, and see if the latter can supply plants with the same kind of food as the former.

Farmyard manure is applied to the soil chiefly for the purpose of supplying crops with nitrogen, phosphoric acid, and potash. The nitrogen is present in fresh farmyard manure in an organic condition—that is, combined with other elements to form the organised structure of plants. The food that cattle eat is of a vegetable nature. The solid excreta of the animals is the undigested part of the food, and is of a vegetable or organic character. Plants do not live on organic substances, so the fresh excreta of animals is useless to them. Farmyard manure, however, soon decays. During decomposition the very nature of the manure is changed, and the organic or vegetative character is destroyed, owing to the action of certain living organisms, whose duty it is to convert the organic into inorganic substances.

The food of crops is always absorbed from the soil in an inorganic form. Nitrate of soda is an inorganic substance, and dried blood an organic. The former, therefore, is a plant food, but the latter has to undergo decomposition before it is of any use to crops.

The organic nitrogen in farmyard manure is, during decay, converted into ammonia. The ammonia is then changed by certain nitrifying organisms into nitric acid. The acid when formed in the soil unites with lime and forms nitrate of lime; and it is from this source that plants obtain their chief supply of nitrogen. The nitrate of lime formed by the decomposition of farmyard manure is exactly the same in character and composition as the substance we might buy under that name from the chemist.

When nitrate of soda is applied to soils in which there is a good supply of carbonate of lime the nitric acid of the nitrate of soda unites with the lime and forms nitrate of lime. Some of the nitrate of soda may be absorbed by the roots, but the larger quantity of nitrogen will be taken up as nitrate of lime. If sulphate of ammonia be applied to soil instead of nitrate of soda, the sulphate will be changed by the nitrifying organisms into nitrate of lime. If dried blood be applied instead of either of the former, it will first of all decompose and the nitrogen will be changed into ammonia, and then the ammonia will be converted into nitrate of lime.

The three manures to which we have just referred are all applied for the purpose of supplying plants with nitrogen, and we see that although the three sources are entirely different in character, they all become the same kind of substance—namely, nitrate of lime, before they are taken up by crops. We have put these facts as clearly as possible before our readers with the idea of showing how some of the plant food in farmyard manure must become similar in composition to those chemicals we call artificial manures. We cannot, therefore, understand how your correspondent, "A. D.," can write as he does on page 147 to the effect "that such experiments as he has carried out with artificial manures has led him to realise their practical worthlessness."

Artificial manures never can and never will take the place of good farmyard manure, because the latter has other work to do in the soil besides supplying plants with food; but that a judicious use of the former, in conjunction with the latter, will in most cases produce better crops than either used alone, is a fact beyond dispute, and many are the instances which have come under our notice that might be brought forward to prove the same. Farmyard manure is slow and lasting in its action; artificials act quickly, but are none the less sure.

What would our Grape, Cucumber, Tomato, Chrysanthemum, and other plant growers do without artificial manures? Artificial fertilisers now form the backbone of successful culture, but brains are needed for their proper application.

What we should like to see carried out in practice is (1) Every grower to be his own manure mixer; (2) For each of them to know exactly what his plants require; and (3) To give crops their most appropriate food. We know many artificial manures on the market which are practically worthless; but so long as growers are not able to tell the difference between a good and a bad analysis, these merchants will continue to flourish.

Last year we had a labourer working for us who did not believe in the use of artificial manures, and was not afraid of saying so. When we gave our Tomatoes their first dressing he smiled at what I suppose he considered our foolishness; but long before we gave the plants their last feed, he said: "Well, I never used to believe in them there artificials, but I do now;" and this, to my mind, is a sufficient proof that they are of more value than "A. D." would have us suppose.

—W. DYKE.

(To be continued.)

URCEOCHARIS CLIBRANI.

THIS plant ("R. P. J.") was first shown at the Drill Hall by Messrs. Clibran & Sons, Altrincham, in 1892, and was the result of a cross between *Eucharis grandiflora* and *Urceolina pendula*. The individual flowers, as may be seen in the accompanying woodcut (fig. 30), bear a resemblance to both parents. They are borne in umbels on strong stalks similar to the *Eucharis*, and, unlike the *Urceolina*, are erect on first expanding, drooping slightly when past their best. Being pure white



FIG. 30.—URCEOCHARIS CLIBRANI.

and extremely beautiful in appearance, the flowers prove valuable for decorative purposes. The leaves are broad and as vigorous as those of the *Eucharis*.

APRICOT STOCKS.

ALLOW me to thank "W. S." for his excellent critique on page 121, to which I should have responded sooner, but for the "hope deferred" of some of our fruit tree raisers giving us the benefit of their experience in the matter of stocks for this really choice wall fruit. Of course several manufacturers of fruit trees for sale know little practically of Apricots beyond the saleable article, but there are many exceptions to almost all general rules; not a few of our fruit nurserymen having grown or attempted to grow Apricots against the walls of their buildings, if not on walls specially constructed for the purpose. The late Mr. J. R. Pearson went so far as to endeavour to grow Apricots in glazed sheds, but I am not aware with what success, hence the present representatives of the famous fruit-growing, as well as fruit-tree raising firm, may possibly oblige with a few notes on the subject of both young trees on certain stocks in the nursery, and of their doings when placed in the permanent fruiting quarters.

The late Mr. T. Rivers must have had experience of the hardier varieties of Apricots, for he wrote of the Breda and Alberge as the "only kinds that succeed in England as standards in the open air." He, however, took to growing the Apricot under glass, extolling the fruit so grown, in his first edition of the "Orchard House," as vastly superior in quality to that grown on walls, a mode of culture I also tried and found just as unsatisfactory as that of growing the strong-growing varieties against low walls has always been with me. This, mark, has no reference to the culture of the Apricot under glass as a separate fruit, or in a house by itself, for the failure arose from the mixed system of culture advised and adopted. The trees were certainly healthier, as most of our tenderer fruits are under the restrictive root system, and the drier conditions of the atmosphere, as compared with the "run as you please" outdoor principle of borders for the roots, and the crippling of the limbs on low walls, inducing "canker" or collapse of the branches, and but meagre crops of fruit.

I do not know whether Apricots are still grown under glass at Sawbridgeworth, or to what extent the raising of Apricot trees is practised there, or in such establishments as that of Mr. Bunyard at Maidstone; but the "Orchard House" is in evidence, and to be that in more than name must, according to its founder, contain representatives of all our choicest and tenderest of so-called hardy fruits. This is the very point I wanted to get at—namely, is the "partial or total failure" of Apricots on walls due to influence of unsuitable stocks, or to methods of culture under unfavourable circumstances, and on these points no persons are so able to express an opinion as those thoroughly acquainted with the different varieties of stocks. A few lines from these gentlemen would be very interesting and useful, as there is no question, as "W. S." puts it, of the Apricot being "an uncertain, and fast becoming an unprofitable crop" in this country.

For this there must be some reason, as "W. S." knows trees that "are over sixty years of age as healthy and fruitful as anyone could wish," therefore the success points to something wrong somewhere when Apricots fail, and that mainly through "gumming, and the sudden collapse of the branches." What is it? Lack of natural shelter, defective soil, staple and components, inefficient drainage, or unsuitable stocks! In addition to restriction to low walls, I consider the stock, and the mode of raising a tender fruit in the open ground, as the foundation of all the ills in Apricot culture against walls.

"W. S." further observes, "Of varieties, Hemskerk is the best here; this gives large fruit, good in colour and quality, ripening about the middle of August." Mr. Iggulden said very much the same some time ago in the *Journal of Horticulture*, and the locality of Frome certainly is not one of the best from situation and soil for the Apricot. This variety is a well-known hardy form of Moorpark; and if so, why not more be raised of the same characteristic hardiness, and even better, *plus* the good properties in size, colour, and quality of fruit? The question of stocks also comes very strongly to the fore, standards or riders being mostly worked on the Brussels stock, and the trees of "Kaisha and Moorpark as wall standards are as yet satisfactory." Such records of experience are just what practical cultivators require for guidance, in order to prevent planting trees that may prove unprofitable, and to so choose varieties that there may be a reasonable prospect of remunerative return for investment of capital and reward for labour.

The "dwarf-trained trees of all sorts have been a signal failure," writes "W. S." Nothing possibly could be more decisive—standards a success because on a hardy and suitable stock; dwarf-trained trees a failure perhaps through being on the St. Julien stock. This "saint" proves very delusive, and a fearful sucker on some soils. Peaches and Nectarines gummed dreadfully upon it with me on heavy soils, while the trees were awkward to manage, and to keep them at all healthy on walls frequent lifting had to be resorted to in cold localities.

Mention of this matter raises the question of climate. In the north I have found the hardy Mussel better as a stock for the Apricot than the St. Julien, and the Brussels superior to either, only the trees must have the high wall of the cottage, dwelling, or outbuilding to succeed profitably. The low wall means the narrow border of the garden, and roots restricted correspondingly with the branches. I have nothing to say against the Apricot succeeding even on its own roots or those of seedling Breda stocks. Your able correspondent hits the point exactly when he says "newly planted trees require frequent and careful digging about their roots"—that is, root restriction—"severing any tendency towards grossness, and incorporating with the soil in the course of filling in lime grit, road scrapings—where limestone is used in repairs—and burnt refuse." This is the practice advised by the late Dr. Hogg for keeping the Moorpark Apricot healthy and fruitful from an early stage after planting against garden walls. I have practised it for many years, and found it in every way satisfactory, but instead of patching up old trees on low walls, the better plan is to root them out and plant such varieties as come early into bearing—e.g., Kaisha, and others which are not prone to gumming from the start, as many trees are, mainly because on unsuitable stocks. I thank "W. S." for his very practical article, and trust others will take up the running on similar lines, not only on Apricot, but other branches—indeed, all the ins and outs of practical gardening, for it is just these observations and experiences that carry weight. No evidence tells so forcibly as that which is founded on the experience of real workers. I hope to hear more from them. The simplest matters are often of the greatest value. I did not mean my articles to be "exhaustive," but rather to elicit information for the benefit of those workers with spade and head who are desirous to learn all they can on various subjects in gardening.—G. ABBEY.



DEATH OF MR. RIVERS H. LANGTON.

IT is with deep regret that we have to record the death of this promising rosarian, which occurred on February 19th, at the early age of thirty-six years. The deceased's illness was of brief duration, the death being caused by pneumonia following influenza. Of late years Mr. Langton, whose home was at Raymead, Hendon, had become well-known as an ardent lover and exhibitor of the Rose, which ever held first place in his affection, though he was equally successful in the cultivation and exhibition of the Chrysanthemum. His cheery presence at the exhibitions and meetings he was in the habit of attending will be much missed by his many friends. It will be remembered that, on page 376 of the *Journal of Horticulture*, for October 15th, 1896, Mr. Langton contributed an interesting analysis of the Roses he had shown during that season.

ROSE MURIEL GRAHAME.

IT may be of interest to some of your readers to know that our plant of Catherine Mermet, which sported Muriel Grahame, has again put forth the same variety from another part of the plant. This time it is a sucker-like growth from the base (2 feet lower than before), and bore a really good bloom that was a fac-simile of the Muriel Grahame I have seen from time to time, both upon our own plants from the introducers, as well as on those raised during the past few years from the sport originating here.—A PIPER, *Uckfield*.

GARDEN ROSES.

THOUGH my own supreme favourites among garden Roses are chiefly Chinas, Austrian and Penzance Briars, Teas and Hybrid Teas, I sympathise with Lord Penzance and "D., Deal," in their opinion that such fine Roses as the Gallicas, Hybrid Bourbons, and Hybrid Chinas are not so widely cultivated or frequently exhibited as they ought to be. Most of these are vigorous in constitution, strong growing, highly artistic, and very floriferous. The Dean of Rochester has recorded his conviction that it was an individual bloom of D'Aguesseau, whose colour is crimson richly shaded with purple, that first inspired him with his passionate love of the Rose. One of the sweetest of garden Roses is a Hybrid Noisette, Madame Alfred Carrière, which has, in addition to its soft and graceful beauty, a charming fragrance. It is an admirable Rose for a sheltered south wall.—DAVID R. WILLIAMSON.

ROSES AND CLEMATISES.

WE do not find these two grand flowers grown in connection nearly so often as they deserve. Wherever they have been tried together I have found them form a most popular combination; but perhaps the most pleasing is when grown with our pegged-down Roses, in the way I will endeavour to describe. When pegged-down Roses of the Mdle. Gabrielle Luizet, Mrs. Paul, Margaret Dickson, and similar varieties are grown, we find very few flowers late in the summer. In addition to this, the plants have rather an untidy appearance. Now, if we plant Clematises of the Jackmanni and Viticella type, we get a glorious show of blossom at the very time when the Roses are going past their chief beauty, thus keeping up a succession of flowers in the same bed. There is need, of course, of a little more care and trouble when pruning and pegging down the Roses, but both plants enjoy similar treatment otherwise. The Clematises should be planted near the stools of the strong growing Roses, and alternately with them.

Let us start from the present time, and follow the routine of operations. Our Roses are now being pruned; the wood that flowered so profusely last year when pegged down is cut away entirely. Any Clematis growth around this wood is also cut off. The classes or types named are practically herbaceous perennials, and may therefore be cut down to their base. Having cut away the pegged-down shoots, we strip off any old Clematis growth from the strong upright shoots of the Roses that sprang from the base during late summer and autumn. The ground is cleaned and well mulched around the plants, previously taking the precaution to place some soot around the Clematis stools as a safeguard against slugs, which are particularly fond of the young growths, and eat them off directly they appear.

Now peg down the Rose shoots in the ordinary manner. The Clematis, being close to the Rose stool, and an early grower, will fight its own battle, and push up through any Rose growth, while as the long rods of the latter grow from the base the former will ramble round and among both the upright rod and the Rose growths where pegged down. It is a characteristic of the Jackmanni and Viticella types of Clematis to make long growths and flower from each pair of eyes from July until September, the very time when our Roses of the class named are bare of blossom. The natural effect of Clematises when growing in this form, and allowed to ramble among the Rose growth at will, is one of the most delightful features in any garden.

We can so arrange our beds of pegged down Roses as to get a good contrast of colours from the end of June until the latter part of July, and follow this up with contrasting colours of Clematises from that time until late in the autumn. A few of the Clematises we have found best for this purpose are: Jackmanni section—Jackmanni, dark violet-purple; Jackmanni

alba, white; Alexandria, reddish violet; rubro-violacea, maroon purple; Tunbridgensis, deep bluish mauve; and Gipsy Queen, a very dark velvety purple. Viticella section—Hendersoni, bluish purple; Lady Bovill, greyish blue; Viticella alba, greyish white; and Ascotiensis, deep azure blue.—SUSSEX.

HYBRID PERPETUAL ROSES IN POTS.

ALTHOUGH all pot and other Roses under glass produce a larger number of flowers, and of much better quality when grown steadily, than when hard forced, this class needs such treatment most of all. The Hybrid Perpetuals will not submit to hard forcing so well as the Teas and Noisettes, and a few of the Hybrid Teas. Our own H.P.'s are now well into growth, and showing their flower buds prominently. From this stage they will bear more heat; but if this had been afforded during the early part of January the probability is many of the growths now bearing a healthy flower bud would have been blind. Satisfactory results with these also depend more upon selection of varieties than is the case in other classes. I am alluding more particularly to Roses wanted early, and to assist the display of our lighter coloured Teas, in which case we should select those of few petals, and which open well. There is no better dark red H. Perpetual for the purpose than Général Jacqueminot. Fisher Holmes, Lady Helen Stewart, Bruce Findlay, and Dupuy Jamain are also good. Prince Camille de Rohan gives us a quantity of very dark maroon-shaded blossoms, and opens well.

There are a few Hybrid Teas of exceptional merit for pot work, and as these are freer and more continuous bloomers than the majority of the H.P.'s, they deserve mention here. The best with us is Mrs. W. C. Whitney, a long and very bright bud; Mrs. W. J. Grant, W. F. Bennett, and Souvenir de Wootton are all good reds. The light-coloured varieties, both of H. Perpetuals and H. Teas, can be better replaced by the many excellent Teas and Noisettes. It is the dark reds which we need when forcing the class more particularly under notice.

The plants should be well established in pots, stood in a cool pit or frame by the beginning of November, and be partly plunged and kept close until the buds commence swelling. Then prune rather hard and place them into a temperature of 40° to 45° until the beginning of the year, when they should be showing growth of 2 to 3 inches. From this time onwards the temperature may gradually increase, rising to 55° to 60° by the early part of February, after which a further rise of 5° to 10° will not harm.

The Hybrid Perpetuals seem much more subject to attacks from caterpillars and grubs than the Teas and Noisettes, but I do not find them quite so subject to aphides. So far as culture is concerned they may be treated similarly to Teas after they have made growths of 2 to 3 inches, but it is a decided advantage to grow them more steadily until they reach that stage.—PRACTICE.

GOOD BEDDING ROSES.

WHILE it is not too late for planting a short selection of those varieties most suited for bedding may be of service. I do not mean the ordinary beds or borders of Hybrid Perpetuals and Teas, but Roses to take the place of summer bedding plants generally used in masses on lawns. Not by any means the least suitable for this purpose are such Roses as the Chinas, miniature Polyanthas, and a few of the Bourbons, Teas, and Hybrid Teas. I would rigidly avoid any that are summer bloomers only, and if the following selection be adhered to we shall find a constant show of trusses all through the season.

In bedding Roses it is a great mistake to make use of too many varieties in one bed. One, or at the most two, are ample. A mixture will almost always have a rough appearance, while the effect from other points of view is inferior to that produced when one or two varieties only are relied on. There is also need for judgment in planting, especially as to how far apart they should be. We want an immediate effect, and if planted thickly now it is easy to lift out a few later on should they become unduly crowded. Most of those I will name are dwarf and compact growers. The following Polyanthas may be planted a foot apart each way.

ANNA MARIA DE MONTRAVEL, pure white, of imbricated form, and remarkably free blooming. Parquerette is another pure white, producing its flowers in panicles.

BLANCHE REBATEL.—A deep crimson with rosy shading, and produces immense trusses. A second red Polyantha may be found in Souvenir d'Elise Chatelard.

ETOILE D'OR.—A very free flowering citron and chrome yellow; while Perle d'Or, one of the very best and freest of its class, gives us a deep nankeen yellow with orange centres.

CECILE BRUNNER and GLOIRE DES POLYANTHAS give us a light rose shade with paler centres. The first is exceptionally sweet scented; and the last one of the most prolific of bloomers. Golden Fairy is very changeable; generally a clear buff, with lighter edges, and often pure yellow and pure white blossoms are found upon the same truss.

The above are all perfect little Roses, seldom larger than a shilling, and produced in immense trusses. It is not often they grow more than 15 to 18 inches high, and they are among the hardiest class of Roses we have. Even if cut down to the ground line they seldom fail to push up and make a pretty show the next summer. Nor could we have any Roses better suited for edgings to Rose beds, or as a very dwarf edging to the lawn. I have seen charming effects obtained by several small beds of these Roses, each containing one variety only.

Some of the Chinese or "Monthly" Roses are very useful, and the following may be planted the same distance apart in connection with the Polyanthas named. They are particularly useful because of the rich

colours, such as found in Cramoisie Superieure, rich velvety crimson; Eugène Beauharnais, amaranth; Fabvier, a dazzling semi-double scarlet; Prince Charles, bright cherry red; and Red Pet, dark crimson, with very small flowers. Some authorities class the last named and The Pet (a good white) with the Polyanthas, and they certainly approach that class very closely.

A new Bourbon from Waltham Cross named Lorna Doone must not be missed. This is a deep magenta and carmine, with a suspicion of scarlet. It is a very free bloomer and sweetly scented. I would give this variety 18 inches space each way. Queen of Bedders is another grand Rose from this class. It is a very deep and bright crimson, and one of our best autumnal bloomers.

Among the Teas we find Papa Gontier, a rosy crimson with very long buds; G. Nabonnand, an almost indescribable colour, pale salmon rose shaded with peach and yellow; and Perle des Jardins, a deep yellow of great beauty, and with most handsome foliage. It would be difficult to say too much in favour of these three for bedding, but they are taller than the others named, often reaching 3 feet.

The Hybrid Teas supply La France, Captain Christy, Augustine Guinoisseau, Camoens, Mrs. W. J. Grant, Mrs. W. C. Whitney, Grace Darling, Marjorie, Marquis of Salisbury, and Lady Mary Fitzwilliam, all of which, excepting the last, are about 2 feet high when in full vigour.—OBSERVER.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION BALLOT.

I AM quite willing that "S." (whoever he may be) should (page 173) challenge my remarks on page 132, but I will ask him not to misrepresent my statements. If he will refer again to the page cited he will not find the words he uses "my employer and family," but will find the words "he gave"—i.e., for himself, for his son, and his grandson—thus enlisting their sympathy with the Institution, and bringing them in close touch with it in the earliest days of life, and with a full hope that they would cultivate a taste for that bright ornament "Charity," and further support the Institution in later years. I had not the slightest intention of writing one word *re* the election until I saw the notes of "A. D." (page 101), and while referring to them I felt it was reasonable to call attention to what I thought an oversight on the part of subscribers. "To complain" we have no cause whatever, because it does not affect us in the slightest degree; neither did the candidate ask for support; it was simply suggested to him.

I can assure "S." that whatever has been given by my employer has been given with the purest of motives, and not, as stated, for the purpose of "selecting a candidate at every election," as this is the first candidate he has been interested in. While speaking of liberal subscribers (donors) "S." gives expression to his feelings—"all honour to them for doing so;" but surely such honour should meet with a fair amount of reciprocity, otherwise it amounts to ingratitude on the part of the recipients.

I confess that I should very much like to "find gardeners throughout the country making their presence known," and that in a more substantial form, at the Institution in earlier life. Of the thousands of gardeners in the United Kingdom, what a small percentage subscribe at all! and still more regrettable that a very large percentage of them who do subscribe find their way to the doors after the age of sixty years, at the time when they are at once eligible as pensioners. I note "S." appeals to all gardeners, "whether young or old." I sincerely hope his appeal may prove influential over the minds of many, more particularly with the young, but I fear the power of an initial writer may not carry that weight we would wish to see, as many influential men have met with little response in the way we desire.

If the Institution were entirely in the hands of gardeners, and no donors came forward, it would undoubtedly soon vanish, as the Treasurer informed us at the last meeting. "If donations ceased the Institution would also cease in ten years, as by that time the funds would be completely exhausted," hence the value of donors. I assure "S." I have not the slightest intention to ignore anyone, other than such of those who have the indiscretion to say, "We want help, our coffers are open for your money, you can nominate a candidate, but he must have subscribed two or three pounds or cannot expect to be elected, no matter what his merits may be, and there must be no canvassing, as in other institutions, as that at once disqualifies." To that man or institution I would say, "Please pass on, I do not subscribe to an institution to have my lips sealed;" under such circumstances I prefer to dole out the money where I think it is most needed.

I have read a parable of a pharisee and publican. The former thought himself righteous. To my mind this well applies to the man who has spent the whole of his life and attempted to do nothing until he finds himself within a year or two of the Institution, and then, by great effort, gives two or three years' money to establish his claim. "See how good I've been." The latter (publican) I compare to that man who honestly says "I have spent my life so far and sorry I did not help the Institution when I could, but now it is beyond me, as I really cannot do it." Personally, I would give my vote to the latter, because he does not in the last moments of time try to establish a claim with a mite whereas the former does.

On the other hand there are many gardeners who never have been able to afford to subscribe to the Institution. Sickness, or having frequently to change places through no fault of their own, families, and

many other things have kept them poor, but probably they have used their influence with others, and been the means of obtaining donations from them, directly or indirectly to the charity. I consider such men more worthy of support than the man who says, "I have given £5 and expect the pension of £20 for it to the exclusion of those who have never been able to subscribe," because the "benevolence" of the man who gives £5 in the full hope and expectation of having it returned a thousandfold is pure selfishness. This strictly applies to those over sixty years of age. How long could an institution exist if it were dependant on such subscribers? I do not say this out of any selfish motive, as I have long ago passed that harbour of refuge, "The Gardeners' Royal Benevolent Institution," and sailed into a safer port, and am writing purely in the interests of gardeners and their institution.

I must say "A. D." has so far failed to justify his words "a sham," or to suggest any practical improvement on the present method of election. His "stamp and number in red ink" would give extra work, and the book he speaks of must reveal the names, therefore what benefit would it be? As to his remark on page 146, "to be used in bundles for making certain candidates safe," it is not worthy of comment. I have looked in vain through the last two or three years' lists of subscribers to find out how long your critical correspondent has been a subscriber, and how many annual meetings he could have attended, so as to justify him in calling them sham ones. Will he inform us? I have for some years contributed to and been a supporter of several institutions—one in particular, that gives away more money in one year than the Gardeners' Benevolent is possessed of. The voting is conducted in precisely the same way, with the usual signature as a guarantee of its genuineness, but we enjoy the privileges of exchanging votes—men's for women's, boys' for girls', or aged for juveniles, and *vice-versa*, and never have the slightest complaint; and this has been practised in the Institution perhaps long before "A. D." was born. I consider those who complain of this system do it either because they have had little experience in the management of charities, or for the sake of a form of mental exercise which is not calculated to assist the Institution in any way.—J. OLLERHEAD.

MINT.

SPEARMINT, Peppermint, and Pennyroyal are species of *Mentha*, belonging to the natural order Labiatae. They are hardy perennials, and all natives of Europe, Asia, and Africa, but are chiefly grown in this country, their aromatic leaves being of great service. The Spearmint or garden Mint is well known and appreciated during early spring and summer for its culinary uses. There is in most establishments a regular daily demand for fresh Mint, especially when early Potatoes and green Peas are to be obtained.

Peppermint is cultivated for medicinal purposes. The leaves or young stems may be gathered and tea made of them with boiling water, but the chief use of Peppermint is to form a strong liquid, which is obtained by distillation. The stems are gathered when in flower for this purpose.

Pennyroyal is gathered and dried, then stored away for use in bottles or paper bags. One variety of Pennyroyal named *Mentha pulegium gibraltaricum* was formerly used frequently in carpet bedding, proving very useful for forming edgings of green, compact growth and foliage, dividing lines and groundwork, but a similar plant in growth, and hardier, has taken its place—namely, *Herniaria glabra*.

Spear or garden Mint requires a little systematic cultivation in ordinary moist soil. In dry soils and positions the roots dwindle away. It forms underground rhizomes, which are constantly extending from their original position, so that a bed of Mint requires replanting after a lapse of several years. When the soil is fairly rich and moist Mint will succeed in a position either partially shady or sunny. The present time is a suitable period to break up an exhausted bed. Select young rhizomes found on the outside, and plant them 2 inches deep in rows 8 to 10 inches apart.

After planting, a slight mulch of decayed manure will be beneficial in preventing rapid drying of the soil; but should the weather prove to be very dry in the early part of the summer, applications of water will be necessary. Another method of establishing a bed of Mint is to cut young shoots when about 4 inches long, including a portion of the stem below the soil. Plant at once in rows 8 to 10 inches apart, the cuttings or offsets being inserted about 6 inches asunder. These duly watered and kept fresh will soon become established. April or early in May is a suitable time to carry out this. Keep the bed clear of weeds in summer. In September growth will be completed, when the stems may be cut off close to the soil.

For drying purposes the stems should be cut when the flowers first appear. After the stems have been cleared off in autumn it is a good plan to dress or mulch the bed with a layer of manure, which will not only afford nutriment to the roots, but give a tidy appearance. Mint is easily forced by lifting clumps of roots, placing in a box, and covering with soil, which must be kept moist. A temperature of 50° to 60° will bring it on. The culture of Peppermint is practically the same.

Pennyroyal is a close growing low herb. It is propagated by division, which is best carried out in March or April. Plant the divisions 4 to 6 inches apart in rows 10 inches asunder. In a short time the bed will be a compact mass of growth. The carpet bedding variety should be planted closer, so as to fill up the spaces between as soon as possible. In situations where the plants are subject to damp in winter it is advisable to establish a few vigorous roots in a cold frame, dividing and replanting these in April.—E. D. S.

AFTER FORCING.

How to force, when to force, and what to force are subjects frequently dealt with, and generally this is the end of the matter as far as the scribe is concerned. Once the plant is in flower his end is accomplished, and having detailed the routine of treatment up to this important point, reminders as to the after care are invariably omitted. It must not be so, however, with the gardener who has to produce an annual supply of cut flowers during the early months of the year, and in many cases without being able to give large orders to fill the demand. A gardener so situated, and there are many of them, must think of the future, and so tend his early spring flowering plants that he can rely on them for the next season. It would, perhaps, be wrong to make a charge of waste against the fraternity in this respect, but undoubtedly a want of care exists in many cases, and forced plants, after flowering, are frequently drafted from a heated house to the contrasting conditions of outdoor temperature, and the result is disastrous.

So energetic are our continental neighbours in providing for our horticultural wants that the quantity of Azaleas, Rhododendrons, Deutzias, and other hardwooded flowering plants annually sent to this country for forcing purposes is simply amazing, and the question asked is, What becomes of them all? These plants for the most part are healthy specimens, well furnished with buds and, having bloomed, are in a condition to make healthy growth, which, if properly cared for, means flowers for the future. Do they always get this care? Perhaps so in many instances, but in others they do not, and, having been forced once, they sink into insignificance, and if considered worthy of so much attention they may probably be seen a few seasons afterwards attempting to expand a few solitary blossoms on the outskirts of a shrubbery. It is not always policy to be anxious about peeping behind the scenes, particularly in a garden; but when such is the case, and you see in the out-of-the-way depository for such things groups of recently forced plants with their tender unmaturing growths bowing to the frost or ruthless wind, their pitiable appearance strikes you, and there lies the solution of the query as to what becomes of so many of the imported plants.

There is another side to the question, of course, and a more pleasing one. It is to be found in establishments where plants are forced largely or otherwise, but with a thought to their future utility. Bloom is the main point, and that over growth takes precedence, for it is on this that future usefulness depends. There is no instant banishment to the depository outdoors, there to live or die as the case may be, but a fostering of the plants to produce young shoots, followed by the hardening process, and then a place in the nursery plot or elsewhere until their turn comes round again. Rhododendrons, Azalea mollis, Spiræas, Staphyleas, Lilacs, and a host of others, will amply repay for the care bestowed upon them.

There is no plant more readily forced, or more pleasing in that condition, than the old *Deutzia gracilis*, first when its long branches, covered with snowy unopened buds, strongly resemble the half-developed bells of Lily of the Valley, and then afterwards when the buds open wide and the plant presents a mass of white purity. Many establishments possess stock specimens of *Deutzia*, which season after season are forced, and never fail to produce long flower-covered branches; and on the other hand plants of stunted growth are often seen only producing a tithe of the flowers. The contrast is caused by the difference of treatment after the blooming period, for it is then that care is necessary. The forcing for flowers also forces growth, and that growth must be cared for. From the base of the plants long green branches spring up, and after blooming the old wood should be cut away to make room for the new, applying liquid manure to feed them, and keeping the plants in a warm humid temperature to encourage their extension. After that, removal to a cooler structure in order to harden them, and later on a position outdoors in the summer sunshine to effectually ripen them. There is not much in it after all. It is only the attention that is due to the plants, but if given at the proper time, and with care in potting and watering, the *Deutzias* of this season will bloom as well next and for many years to come until they will become to be as they veritably are in some gardens—old friends. Every gardener who is expected to supply cut flowers early in the year will testify to the usefulness of a number of well-grown *Deutzias* that can be relied on, and it is apparent that the failure, which is by no means uncommon, to obtain an annual supply of bloom from the same plants is due to want of care after forcing.

Spiræa japonica is another plant of the common order, yet we cannot dispense with it for forcing purposes, nor would we do so, as there is nothing to take its place. Any plant of hardy and accommodating nature is sure to be abused, and *Spiræa japonica* is a case in point, as frequently it is either forced to death or after blooming the first time it is bundled outside to make room for something else, without a care for its future welfare. The one extreme is as bad as the other. There are establishments where the forcing order is a regular thing to be given every autumn, and in some such gardens the question of after care is only of minor importance. In other gardens the same plants must do duty again, and the *Spiræas* have to be so arranged that the roots forced this year shall be divided and rested next to come in for active service the season following. A *Spiræa* when in bloom in a pot is a handsome specimen, and as such is admired. Surely, then, it is worth the after care it demands. It is not much, only a few weeks in a warm house, with plenty of water, then a gradual hardening, and finally dividing, if necessary, and planting in the nursery quarter. This, with a little management so that the same clumps are not forced in successive seasons, and *Spiræa japonica* becomes a useful and permanent part of the forcing stock in trade.

Then, again, take Rhododendrons of the roseum and pictum types, also the charming white Cunninghami and others. How useful are dwarf bushes of these for forcing where cut flowers are much in demand! They may be bought easily enough, it is true, well set with buds; but expense is often a grave consideration, and in such cases the gardener must depend on his own resources, though at the same time he is expected to have the flowers. It cannot be done without care, and that care bestowed not only while in bloom, but afterwards when young growth begins. These Rhododendrons are of a hardy, accommodating nature, and suitable varieties may be forced several times over if a season of rest is given between. In some districts the soil is naturally suited for Rhododendrons, and they will thrive in any position in the gardens. In others such is not the case, and it is worth the trouble to prepare a bed for the reception of the plants after forcing by mixing peat and leaf mould with the ordinary soil. Plants, however, must not be discarded directly the flowering is over, but gradually inured to cooler temperature till they may safely be removed outdoors.

Azalea mollis cannot be induced to throw up a wealth of buds in after seasons similar to that with which they are furnished when purchased; still, they will subsequently produce sufficient to merit their being forced again and yet again with proper rest between; but it is only when they receive attention due to them after blooming that this can be expected. The same remarks apply to Lilacs, Staphyleas, and similar members of the forcing section. Plants are often ready to do more for us than we for them, and all these well-known plants, the culture of which is A B C to all gardeners, asks is care, and that care bestowed principally after forcing.—G. H. H.

ARISÆMAS.

THERE are several of these plants known to botanists, though it cannot be said that they are very extensively grown. Indeed it is rare that any are met with except in establishments where a collection of plants of botanical interest is cultivated.

Sir Joseph Hooker says of the genus and of *A. Wrayi* (fig. 31), "The genus *Arisæma* is a remarkable one amongst Aroids for its wide range in latitude from the tropics to far into the north temperate zone; and, as might be expected from this, the elevation it attains is equally remarkable, from the low-lying equatorial regions of the Malayan Archipelago to an elevation of 12,000 feet in the Himalaya. And what is very singular in a genus of so wide a distribution, there are no sectional groups of it more characteristic of the colder than of the hotter regions, or *vice versa*. The nearest ally of *A. Wrayi* is the Javanese and Sumatran *A. filiforme*, Blume. *A. Wrayi* itself is a native of Perak, where it was discovered by Mr. L. Wray, who, in 1884, sent herbarium specimens to Kew from Birch's Hill with the note that the flowers are pale lilac and white, whereas in the cultivated plant they are pale green. In 1888 the same excellent correspondent sent living tubers to Kew which flowered in January, 1889, and from one of these the accompanying figure was made."

It is distinct and rather attractive, and is evidently well adapted to culture in pots. The spathes are neat in shape, and of moderate size; the soft shade of green, the white centre, and the long slender green spadix impart a very graceful appearance to the plant. The leaves are divided into five to nine narrow leaflets, about 8 inches long each, the leafstalks and scape being green and white, dotted with red, giving a very peculiar effect. The plant, like most of its relatives, requires a warm house, a light open soil, abundance of water when in growth and flower, and a period of rest.

CORDON GOOSEBERRIES.

I AM a staunch believer in the method of cultivating Gooseberries as cordons and multiple cordons on walls. The engraving on page 149 shows an extremely fine picture of trees grown in this way. Splendid opportunities are offered in all gardens where newly planted wall trees are put in to fill up the spaces between the permanent trees, even if only for a few years, with Gooseberry cordons. This is a capital plan of utilising wall space, no crop giving more satisfaction than Gooseberries either for early picking for tarts, or for use as dessert when ripe. It is surprising how much earlier the fruit is ready for use from trees growing against walls, especially with an eastern aspect, as compared with bush grown trees in the open. A similar difference, too, is apparent with ripe fruit. When allowed to hang upon the trees till fully ripe the flavour of such sorts as Crown Bob, Whinham's Industry, and Warrington is wonderfully improved.

To obtain the best return in a short time the multiple cordon is better than the orthodox tree of one branch. Those with half a dozen branches do not require more than 15 inches of wall space, especially if they are closely summer pruned, as they should be, admitting light and air freely. Abundance of water at the roots during dry weather is a decided help in promoting a luxuriant growth, encouraging the swelling of the fruit and warding off attacks of red spider, which are partial to Gooseberry leaves. The vigorous upright growing kinds, like the old Champagne, for example, are preferred, as they sooner fill the allotted

space. When the right number of branches has been secured the leading shoots do not require hard pruning, simply removing the point of each to induce a full complement of eyes to push into growth, and thus furnish the branches thoroughly with fruit spurs. Vigorous syringing of the branches in the evening after a hot day is beneficial to the trees, cleanses the fruit from dust, and does much to keep down the spread of insect pests.—E. M.

LONDON'S OPEN SPACES.

III.—HAMPESTEAD HEATH, PARLIAMENT HILL, WATERLOW PARK.

RIGHT away back to the time of the Roman occupation of Britain dates the fame of London's most beautiful breathing ground, Hampstead Heath. It was the old Romans who opened it up. Until they came it was a dense forest that had possibly never been penetrated, but they cut into it in making the great military road called Watling Street, now known as the Great North Road. From their time for a long period onward it was common land, and each man did with its wood or grass what he desired to do, until in 1170 the early chronicler, Fitz-Stephen, spoke of it as that "immense forest, beautiful with woods and groves, full of the lairs and coverts of wild beasts and game, stags, bucks, boars, and wild bulls." To the wonderful sporting rights that must have existed at this time in Hampstead the citizens of London laid claim, and kings confirmed that claim. Henry I. embodied it in one of his most famous statutes, and in charters granted by Henry II., Richard II., and John those rights were confirmed over and over again, and spoken of as inalienable.

The worthy citizens appreciated the good things granted them at Hampstead, where, to again quote Fitz-Stephen, many of them took "great delight in fowling with merlins, hawks, &c., as likewise in hunting." The district was practically disforested in 1218 by Henry III., but much of the great Middlesex wood remained to shelter its wild inhabitants for centuries later. In later years it was known as Hampstead Wood, but all that remains of that wondrous "mass of greenery" are the few copse-like clumps of timber and undergrowth known as "Ken" or "Caen" Woods. That royal glutton and land-thief, Henry VIII., was the first monarch to curtail the citizens' privilege at Hampstead, and he issued a proclamation making it felony for any save at his command to hunt or take game within the lands between "owre Palace of Westminster" to St. Giles-in-the-Fields, and from thence to Isledon (Islington), "our Ladye of the Oke (Gospel Oak), Highgate, Hornsey, and Hampstead." It was while hawking on Hampstead Heath that Henry nearly lost his life, for, following the sport eagerly, he fell headforemost into a muddy ditch, and was nearly suffocated before his attendants could pull him out.

Through the latter part of the seventeenth century Hampstead Heath gained a most unenviable reputation as the resort of robbers and highwaymen, and in the eighteenth century it was notorious. Being a short cut, with several fairly good roads, it was much frequented by merchants and traders, who often rode in strong bodies for protection. Dr. Sibley, a clergyman, was stopped at one of the small cross roads and robbed by a "well mounted rogue, wearing much silver braid and of a convincing manner." This was John Rann, better known as "Sixteen Stringed Jack," who two years after—November 30th, 1774—was hanged at Tyburn. At his trial it was alleged that for a considerable period while

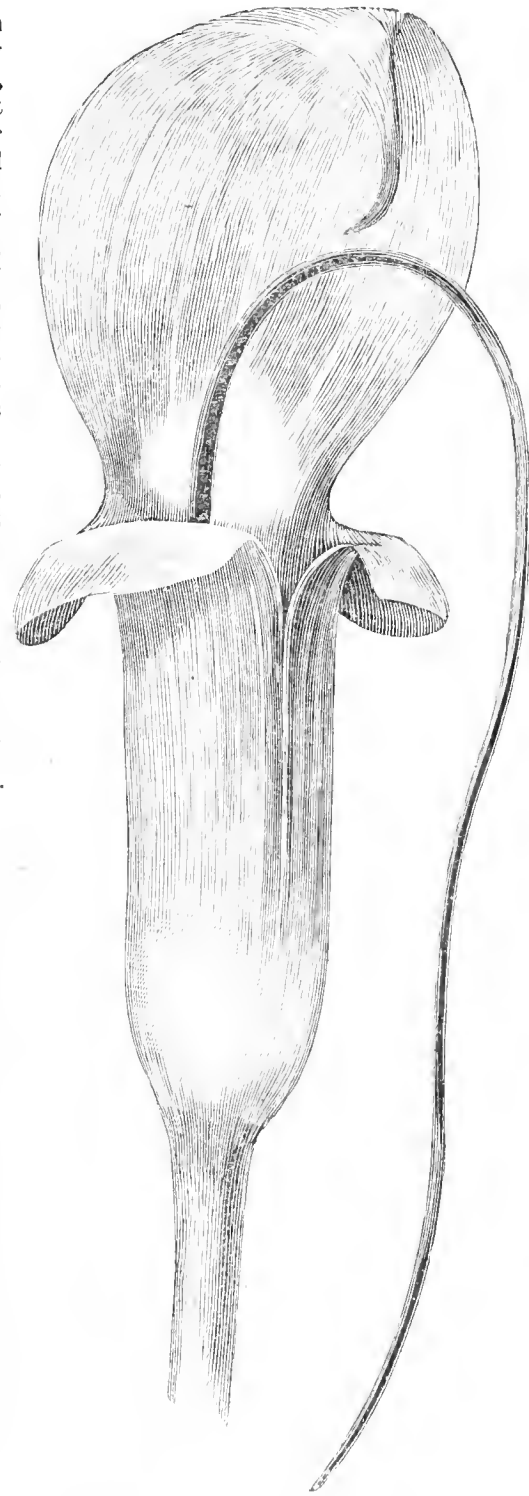


FIG. 31.—ARISÆMA WRAYI.

carrying on his robberies he had been living at Jack Straw's Castle, the well-known inn, as Mr. Grice, a "gentleman of leisure." At this period Hampstead was celebrated as a watering place, and was thronged by the idle, sickly, and dissipated of all classes. There were concerts at the Long Room, raffles at the Wells, entertainments at Belsize, and private marriages at Sion Chapel. The chapel belonged to the publican next door, who advertised a free dinner at his tavern for all folks married at his chapel. The Heath, then much wider and wilder than now, was haunted by gipsies and vagabonds of every description, and on two occasions private stills were discovered in full work, and broken up. Foot-pads abounded, robberies were of daily occurrence; yet, despite these drawbacks, the place was, because of its beauty and surroundings, always a favourite with the public.

It still retains much of its charm, and the 500 acres, over which the County Council now exercises a wise control, is one of the loveliest open spots in England. From it Constable drew much of his inspiration, and he has painted it under all aspects, as his marvellous landscapes in the National Gallery bear witness. Literary men and artists have always loved it. Dickens wrote much of "Little Dorrit" in the room of the tavern, Jack Straw's Castle, that overlooks its wide expanse, and there the chair he used and the table he wrote at are religiously cherished. Not very far away, too, is the Spaniards, that noted old inn from which Mr. Pickwick is supposed to have sent the famous message anent "chops and tomato sauce." For its memories alone Hampstead Heath and its surroundings would be of the deepest interest, but added to these are its numerous natural beauties, making it not merely a metropolitan breathing space of unexampled value, but a national treasure to be preserved as far as possible for all time.

Parliament Hill Fields, now practically made one with Hampstead Heath, were originally a portion of Lord Mansfield's estate known as Caen, or Ken, Wood. The estate and house in 1661 were the property of John Bill, who married Lady Pelham, the daughter of the unfortunate Sir Harry Vane. A portion of the old Gospel Oak Fields is also included in this space, and was formerly the scene of an annual pleasure fair of the most rural character. This fair was abolished in 1864. Gospel Oak is so called from its having been the practice in old times to read aloud under an Oak tree growing on the parish boundary line a portion of the Gospel at the annual boundary beating on Ascension Day. Herrick alluded to this in his "Hesperides."

Dearest, bury me
Under that holy Oak, or Gospel tree,
Where, though thou see'st not, thou may'st
Think upon me,
When thou yearly go'st in procession.

Beneath one of the trees in Gospel Oak Fields, Whitfield, the famous preacher, and the companion of Wesley, used to preach to large audiences of working people. The origin of the name of Parliament Hill is very uncertain. Some antiquaries have traced it back to the holding of shire meetings and similar gatherings upon it. Others assert that it obtained its name because it was the spot chosen by the conspirators of the gunpowder plot as best of all others to witness the destruction of Parliament House by Guy Fawkes.

Another fine open space in the northern part of London is Waterlow Park, which is situated at Highgate. It consists of some 30 acres of finely wooded park land and ornamental waters, and is a most beautiful place. It was formerly known as Lauderdale Park, and the house was for a time the residence of Nell Gwynne, the favourite of Charles II. The house and grounds some twenty years ago became the property of the Waterlow family, and in 1889 Sir Sydney Waterlow munificently presented them to the public as an open space for ever. The old mansion, Lauderdale House, rich with many associations, still stands, and is carefully preserved as a museum and resting place for visitors to the park.—("Lloyd News.")

THE YOUNG GARDENERS' DOMAIN.

PLUMBAGO CAPENSIS.

THE season has now arrived when this beautiful greenhouse plant should be pruned. If the stock is small, it can be easily increased by starting a plant in a temperature of 55° or 60°. In three weeks or a month there will be abundance of cuttings, which root readily under a hand-light or in a propagating frame in light soil. The plants thrive admirably when planted out against the back wall of a greenhouse, if space can be allowed for a border 1½ to 2 feet in width. The compost may consist of three parts loam, one part leaf soil, and one of decayed manure, with a liberal addition of charcoal and sand, and a sprinkling of ¼-inch bones and Clay's fertiliser. If the loam is heavy, a little peat will be of great benefit to the plant.

The shoots should be trained 3 feet apart, and the first season's growth must be cut back to within 3 feet of the ground, then every bud will push forth a shoot, these being annually pruned close back to old shoots or rods. The latter may be allowed 3 feet extension each year until the top of the wall is reached. Three or four good rods will cover a large wall, and when once established may be pruned similar to Vines. No advantage is gained by laying in shoots to form rods at a closer distance than 3 feet. The border should be kept dry when the plant has finished flowering.

The beautiful blue flowers of *Plumbago capensis* are unique in colour, and they will be produced in abundance for three or four months during summer if treated as described. It lasts only a short time when cut for use in vases. Another form, *P. Larpentæ*, is suitable for an edging to borders if in a warm position, and is easily increased by division of the roots in early spring.—J. A.

AN AFTERNOON AT READING.

HAVING recently had the pleasure of visiting Messrs. Sutton and Sons' establishment, I thought it might be interesting to young gardeners like myself if I tried in a few short notes to record my impressions. It would be impossible to attempt to give the number of bulky sacks there are stored in the large rooms which my courteous guide took me through, huge piles of them containing Beans, Peas, and Potatoes for the garden, and more piles of the many seeds for the farm. One could only wonder what becomes of them all.

Passing on, we came to the room where seeds are placed before going abroad; then we found a regiment of women busy hand-picking the broken and bad Peas from the good ones. In another room men were sorting Potatoes, others filling sacks and weighing them ready for going away. In the next room men were filling paper bags of Peas, Beans, and other seeds, for keeping the order room supplied. Passing along we came to the machines in motion, cleaning the various kinds of seeds.

Coming to the vegetable seed order room, shelves, tier above tier, were packed with bags innumerable of the different kinds and varieties of vegetable seeds. The flower seed order room is similar to former, with a bewildering number of drawers for holding the packets of seeds, each drawer having printed on the name the variety contained. It could be seen that everything is done in the most orderly manner—a combination of care with celerity. I must not forget to mention the large railway office, where the labels are directed and affixed to the packages for despatching to their destinations. Then comes the ledger-room with quite an army of clerks at work, while upstairs carpenters were busy making boxes for sending the seeds away.

These nurseries are some little distance away on the confines of the town. The Primulas and Cyclamens afforded a sight not to be forgotten. As we passed through the several houses of Primulas I noted splendidly grown plants of the Star Primula, an excellent variety for decorative purposes, with its many flowering spikes rising high above the foliage; Giant White, with plain and Fern-leaved foliage, and large flowers, 2½ inches across. Equally fine were Rosy Queen, Reading Blue, Reading Scarlet, Gipsy Queen, Double Blue, and Double Pink, the last being a beautiful colour. Not a faulty plant was to be found in the large collection.

The Cyclamens are arranged in a series of long, span-roofed houses, and the plants admirably grown. The handsome marbled foliage and the forest of differently coloured flowers produced a striking effect, among them the white, salmon, crimson, pink, purple, and ruby red varieties being very noteworthy. In other houses Gloxinias were starting into growth, also Begonias, that will, without doubt, make a grand show in their season.

Suitable frames contained healthy dwarf plants of Calceolarias and Cinerarias, that will make a bright show later on. As in the seed department, everything is kept in the most orderly manner, and cleanliness was observable in every house and shed. I think every young gardener might learn a lesson and see a sight not to be forgotten by a visit to the Messrs. Suttons, to whom I am grateful for the privilege and pleasure of having had a look round.—J. B., *Berks.*



FRUIT FORCING.

Cherry House.—To force Cherries successfully ventilation is the main consideration, and requires unremitting attention. A free circulation of air should pass through the house whenever the temperature exceeds 50°, regulating the amount by the conditions of the external atmosphere. Employ fire heat only to maintain 50° through the day, relying on sun heat for advancement, and maintain a night temperature of 40° to 45°. The blossoming over and the fruit swelling, recourse may again be had to gentle syringing. Keep a keen eye on aphides, and promptly fumigate, vapourise, or syringe the trees with an insecticide. Look carefully over the trees for caterpillars—one kind, a species of *Tortrix*, rolls itself up in the leaves, and can be eradicated by squeezing between the finger and thumb, but the other encases itself on the under side of the leaves, giving the appearance of being scalded, and from the leaves passes to the Cherries, eating and spoiling them. The only safe remedy is to search for and destroy the grubs. Supply water or liquid manure to the border as required, keeping trees in pots well supplied, and affording top-dressings of rich material. Pinch side growths at the fourth or fifth leaf, heeling in extensions or growths required to cover vacant spaces.

Cucumbers.—The increased light and sun heat induce greater evaporation, hence necessitate a larger supply of atmospheric moisture; therefore damp the house twice a day, and syringe the plants lightly early on bright afternoons. On cold nights a temperature of 65° is ample, but in mild weather allow 5° more, maintaining 70° to 75° by day, and 80° to 85° or 90° from sun heat, closing early so as to increase the heat to 90°, 95°, or even 100°. Afford liquid manure once or twice a week, always tepid, never too strong. Cut the fruit directly it is large enough. Stop the shoots one joint beyond the fruit; thin the fruits well, removing superfluous

growths, tendrils, bad leaves and blossoms. Ventilate early and carefully, avoiding draughts and depressions of temperature.

Cucumbers and Melons in Pits and Frames.—The plants should have the primary growth stopped at the second leaf before or after planting out, and the resulting shoots again pinched at a similar extent of growth, then allow the growths to extend a foot or more before again pinching, and stop the thus divided shoots at 1 foot from the sides of the frames. The plants will show fruit plentifully under such circumstances, and then stopping one joint beyond the show will throw vigour into the fruits. Little water will be required, nevertheless maintain the soil in a moist state. Cover the lights with double mats at night, and see that the linings are regularly attended to, renewing as required. Prepare materials for making fresh beds and linings. Three parts Oak, Spanish Chestnut, or Beech leaves and one part stable litter make the best beds at this time of year. In a few days there will be warmth in the materials after mixing and moistening; if not, turn the whole, sprinkling with water or liquid manure, so as to moisten the mass, and when in good heat turn the heap outside to inside, two turnings being necessary at intervals of about four days to secure sweetened material. Maintain the bottom heat at 85° to 90°, taking care, however, to prevent overheating.

Peaches and Nectarines.—*Early Forced House.*—The fine forcing weather has improved the fruit wonderfully, it being well advanced in the first swelling, and the very early varieties near commencement of the stoning process. Early and gradual thinning having been attended to, there will be little more than the necessary quantity. Vigorous trees are the most uncertain in stoning, as they are prone to rush into wood growth, and then throw off the fruit. The best remedy for this is lifting, thus concentrating the forces on reproduction. Keep the temperature during the stoning process as equable as possible, as sudden checks by draughts of cold air in the daytime and too high a temperature in the night may prove disastrous. The night temperature may range from 60° to 65°, but 5° less is safer, particularly in severe weather, and in the daytime 70° to 75° with sun heat, and about 65° by artificial means when the atmosphere outside is cold and the sky overcast. Secure the growing shoots to the trellis as they advance, keeping those retained to attract the sap to the fruit stopped at the second or third joint. Red spider must be kept in check by syringing with water at the same temperature as the house, and if brown aphid or thrips appear fumigate carefully when the foliage is quite dry. Take care that the soil does not become too dry.

Succession Houses.—Disbudding and tying-in must be attended to before the growths become too long, disbudding gradually. If the fruits have set thickly—more than a dozen on a foot length of shoot—thin them soon after the remains of the blossoms are cast, removing the smallest fruits, those on the under side of the branches, and those badly placed, leaving three to five of the best. These in turn should be reduced to two or three when not larger than marbles, and finally to one or two, this thinning taking place when the fruit is the size of Walnuts. The temperature may then be raised to 55° to 60° at night, and 60° to 65° by day, from fire heat, ventilating from 65°, and insuring 75° from sun heat, closing moderately early in the afternoon, but avoiding a close atmosphere.

Strawberries in Pots.—The earliest plants now ripening their fruit should have a drier and more freely ventilated house, but there must be no sudden change or the fruit will not finish well. For swelling the temperature should be 65° at night, and 70° to 75° by day, advancing to 80°, 85°, or 90° with sun, and plenty of atmospheric moisture, and after the fruit changes colour the atmosphere should be kept cooler and drier, so as to insure flavour. The second early plants having set the fruit and been thinned, a matter too frequently neglected, will be swelling freely, as the thinning enables the plants to produce fine fruit. Half a dozen berries of even and large size are better than a dozen small; but regard must be had to the variety, for half a dozen on La Grosse Sucrée, still unsurpassed as the surest very early forcer, has its equivalent in a dozen on Vicomtesse Héricart de Thury, Royal Sovereign requiring about the same amount of thinning. Give liquid manure copiously as often as required, examining the plants twice, and in bright weather three times a day for the purpose. Plants in vineries and Peach houses come on successively, and need not be moved except to meet special requirements. Strawberries of the larger varieties placed in cool lean-to or span-roofed houses or frames afford grand fruits a fortnight to three weeks earlier than those in the open ground.

THE KITCHEN GARDEN.

Jerusalem Artichokes.—Thanks to the mildness of the winter green vegetables have been plentiful, and there has been less demand for Artichokes. Another season the case may be different, and there ought to be no neglect in planting as many roots as usual this month. Too often Artichokes are left on the same plot of ground year after year; not replanted, but allowed to spring up thinly and irregularly, with the result that the crops are light and the tubers of poor quality. They ought to have fresh ground, preferably a plot outside of a walled-in garden, and this should be prepared as carefully and thoroughly as for Potatoes. Open drills 6 inches deep and 3 feet apart, and in these plant either medium sized tuber or sets formed by cutting strong tubers, arranging them 1 foot asunder. All that is further necessary is to hoe among the plants when well through the ground, and to mould up Potato fashion. Any tubers not wanted for planting ought now to be lifted, cleared of sprouts, and stored in sand at the foot of a north wall or fence for future use.

Borecole.—These are early running to seed, and if neglected will soon be of no further service. The young shoots ought to be gathered frequently, this causing the formation of later supplies, and which will most probably be found acceptable. Asparagus or Buda Kale are

frequently of the most value in May, but will not give succulent "greens" so late unless kept closely gathered from in March and April. Borecole requires a rather a long period of growth, but if the seed is sown in the open ground during this month the plants will usually be forward enough for putting out by the time the ground is ready for their reception.

Brussels Sprouts.—The sprouts on these must also be kept closely gathered, or otherwise the supply will soon fail. Those who have deferred cutting the hearts will find some close sprouts among the lower leaves, or enough to form good dishes. Since the introduction of improved strains there is less need to raise the plants so early as formerly, but if seed is sown now, either in boxes or beds inside frames, abundance of plants suitable for pricking out on sheltered borders in April should result. Where close cropping is practised the plan of arranging short-topped early maturing varieties of Potatoes 3 feet apart, and planting Brussels Sprouts midway between the Potatoes directly after they have been moulded up, is recommended for adoption. If Veitch's Autumn or other early Broccoli are sown with the Brussels Sprouts, and treated similarly, the plants will produce superior hearts in close succession to autumn Cauliflowers.

Cauliflowers.—The autumn-raised plants are somewhat forward, and those not well established under hand-lights will not transplant readily. The smaller plants in frames or seed beds would experience the least check when finally planted out if first established in small pots under glass. Any raised early this year ought to be quite large enough for pricking into boxes, or for placing either singly in 2½-inch pots or in pairs in 4-inch pots. Sink the stems in good loamy soil, and arrange the plants not far from the glass in gentle heat. Before they become badly root-bound all ought to be hardened somewhat, and planted either in rough frames, hand-lights, at the foot of sunny walls, or on warm borders where they can be roughly protected.

Carrots.—If the first favourable opportunity is taken of sowing seed of an early Horn variety on a light or well prepared south border, this may result in the production of numerous early pullings of tender young roots. A close look out should be kept for the plants, dusting these over with soot and lime directly they show through the soil, repeating the dose occasionally to save them from slugs. The seed would germinate more surely and quickly if given the benefit of a little bottom heat. It is not yet too late to form a shallow hotbed of fresh and partially exhausted leaves and stable manure. Surface the bed with about 6 inches of fine sandy soil, enclosing this with boards. Sow the seed thinly, roughly protecting with mats or trebled fish netting supported by stakes.

Onions.—The most economical, and in the end the most profitable method of culture, is to raise all the plants required in boxes under glass early in the year, and to plant out on well prepared ground when they are about 4 inches high. Not having sown the requisite amount of seed in the manner indicated, an early opportunity should be taken of sowing in the usual way, late raised plants frequently failing to mature properly. Onions ought to have a site that has been early manured, and either trenched or dug in time for the soil to be pulverised by the action of drying winds, frosts, sunshine, and rain. If it can be got into a finely divided state without any extra trouble the manuring and digging may be deferred to nearer sowing time with advantage. After having made the bed fine to a good depth, give a surfacing of one peck of soot per square rod to the heavier soils, and to light, less retentive ground that amount of soot, 4 lbs. of common salt, and a bushel or more of gritty road scrapings per rod. Stir these dressings into the surface with a fork, trample the ground, level, and make a fine surface with a rake; then draw drills half an inch deep, and not too narrow, sowing the seed thinly, but not in a fine line in these, fix with the foot, and smooth over with a rake. Onions will pay well for this extra trouble, the soot and salt in addition to being good fertilisers also acting as preventives of the Onion maggot.

Herbs.—Perennial herbs pay for replanting every second or third year. If a change of border cannot be afforded, lift all the plants, manure the ground freely, and dig deeply prior to dividing and replanting the herbs. Sow seed of the hardier annual kinds, and also Thyme and Sage.

THE BEE-KEEPER.

NOTES ON BEE MANAGEMENT.

IN his endeavour to withdraw from the untenable position in which he is put, "G. H." attempts to place the saddle on the wrong horse, and in doing so, although evidently unaware of the fact, corroborates what we have stated in these columns on several occasions—namely, that many bees are lost whilst on the wing during inclement weather, and through various other causes. These may be briefly referred to here, as being applicable to this season. Although the weather has been exceptionally mild, there is now every appearance of a cold spell of weather setting in, and in that case, as was lately explained, bees that are placed in large hives, and have been encouraged to breed during the winter, will on the appearance of severe frost gradually contract their cluster, and if the brood nest has been unreasonably enlarged many bees will be lost.

If during the short days of winter or late in the spring the ground is covered with snow, and the sun is shining brightly during the middle of the day, the bees will be tempted to leave their hive, and many will alight on the snow, never to rise again, as they will be numbed, and become a prey to the birds. Thousands may be lost in this manner, and steps should always be taken to prevent it. Shortness of stores, too, is a frequent cause of losses in the apiary. We have known on more than one occasion of the whole of the bees leaving their hive from this cause.

"G. H." evidently had other thoughts on this important subject when he penned the interesting note at midwinter—namely, on December 24th, 1896, wherein he says, "A good queen will lay from 3000 to 4000 eggs per day." Again he says, "On March 3rd the bees covered nine frames 18 inches by 9 deep, and by the 1st of April or the first week in May the bees would crowd the hive." Now, after another year's experience, he informs readers that the weather was responsible for the loss of thousands of bees in the early months of the year; and doubtless the colony was less in numbers the first week in May than it was supposed to be two months earlier, thus clearly demonstrating in a practical manner the fallacy of endeavouring to have a hive crowded with bees, as above, in the first three months of the year.

FERTILE QUEENS.

The queen is now only credited with laying the above number of eggs during the height of the season, whatever this may mean. It may mean one month, or six months, more or less. No mention was made of this in his original note on the subject, so it was only reasonable to suppose, after reading of the colony early in March, and the weight of honey that was expected—namely, 350 lbs.—that the said queen was laying eggs to order. No allowance was made for that important factor in bee management, the weather, so it was not surprising that the bees in general, and this colony in particular, did not come up to expectation. We have often proved the value of a good fertile queen. These are usually at their best the second year, and if placed at the head of a strong colony of bees, say from 7 lbs. to 14 lbs. in weight, a surplus will be stored at a great rate. This illustrates in a marked manner what we have often endeavoured to explain—namely, the greater the number of workers in a hive so will the surplus be in proportion. The queen, too, will fill the combs in the brood nest at a rapid rate, perhaps even more so than "G. H." gives her credit for. But everything must be favourable.

WEIGHT OF HONEY OBTAINED.

At page 70 "G. H." mentions the fact of obtaining 180 lbs. of honey from a hive, and that in a district where there was no white Clover within two miles of his apiary. In a later communication (page 136) he says, "Six miles from my home, in a good Clover district, three of us are interested in a bee house that holds twenty hives." It would be interesting to know how the bees and the surplus they obtained during the past season from this favoured locality compared with those not so favourably situated, and from what source the above surplus was obtained. In reply to "Warwick" (page 136), "G. H." says it is recorded that Mr. William Cowie had hives with fifteen frames, 20 inches by 8½, and two tiers of supers filled by the 31st May." Has "G. H." asked himself the question seriously from what source the above large yield of honey could be obtained so early in the year? If he does, we are inclined to think he will not repeat it, but place the paragraph on the same level as the wonderful yield of honey exposed in these pages by "A Border Bee-keeper" not long ago.

HIVES AND FRAMES.

If "G. H." will approach the question of hives and frames with an open mind on the subject we have no fear of the result. We cannot imagine anyone being serious in supposing that half an inch in the depth of a frame makes any difference in the practical management of bees. In previous notes "G. H." has recommended frames 8½ inches, in others 9 inches in depth. The length of the frame has varied somewhat, but we again repeat that it is of little consequence whether the frames are deep or narrow, long or short, if ample room is provided for the bees when they require it.

The size of frames most generally used is 14 inches by 8½ inches. This is known as the Standard frame, because it was chosen by the British Bee-Keeper's Association, after many experiments, as the most suitable size for use in this country. We do not say it is better, but it is certainly as good as any other, and as it is an advantage in many ways to have a recognised size, both in frames and hives, it is advisable for a bee-keeper to have all his frames interchangeable in his apiary, and success will follow if managed on rational lines.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUE RECEIVED.

Dobbie & Co., Rothesay.—Agricultural Seeds.



All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Yellow Wax for Grafting (J. F.).—The yellow wax is a superior class of beeswax, this being sometimes called yellow to distinguish it from white wax. The ordinary beeswax will answer, but some so called is made from other substances than are produced by bees.

Syringing Cucumbers (A. R. W.).—Syringing with a fine spray underneath the leaves of Cucumbers to prevent spider is not injurious to the plants if done at the proper time. If done frequently, regardless of weather and temperature, more harm than good would result. The best time for syringing is early in the afternoon of bright days, closing the house at the time, so that the temperature may rise to 80° or more, and the leaves get dry before nightfall. Some growers syringe also in the morning, except in dull, damp weather.

Size of Cucumber House (Wakopa).—There is nothing gained by having Cucumber houses small. It costs very little more to build a house 12 feet or 15 feet in width than it does to erect one only 10 feet wide, and the extra amount of roof room more than compensates for the outlay. Very few market growers now erect the 12 feet Cucumber houses, as they have found the 15 feet more suitable for their purpose. Excellent crops of Cucumbers were grown in houses of the dimensions named, and it is easy to prevent trouble by the atmosphere being too dry. Small 10 feet wide houses, however, only require three rows of 4-inch pipes.

Small Cauliflowers (Tiller).—You wish to know why your earliest Cauliflowers only come the size of a man's fist, and ask if this indicates want of tillage. Though the richer the land is the larger the heads will be, you cannot make giants out of a naturally early and small variety. What you have been growing is probably one of the first early selections from the Erfurt, and valuable they are because of their precocity. We have seen in very rich soil eight or nine heads such as you describe to the square yard, plants a foot asunder, so the aggregate crop was not very bad. If you want heads larger, but somewhat later, try the Erfurt Mammoth. This is succeeded by the Early London, and for a late supply you will find the largest of all in Autumn Giant, of which we understand a London firm requires as a yearly supply the produce of 500 acres for pickling.

Artificial Manures (C. B. W.).—Previous pages were filled on the arrival of your note. You will see, however, that the subject is dealt with, and have something to show in return for what was shown to you. The same kinds of artificial manures do not produce the same effects in differing soils. Those who use them can only relate their experience. If one person find them of service he has good reason to speak in their favour; if another use them carefully with no practical results, he can only say what is true. His land and crops did not need them. It seems surprising that you have not tested the matter for yourself. A primer—the "Chemistry of the Garden"—is just published by Macmillans. We have a review of it in type, but it is crowded out. You cannot do better than procure a copy at once. It can be had through a bookseller for 1s. You will see what the author, Mr. Cousins, says in favour of experiments over analyses, and he is well acquainted with both.

Judas Tree (H. F.).—This tree is so named because of the allegation of its being the tree on which a world denounced traitor hanged himself. It is a fanciful tradition. Botanically it is *Cercis siliquastrum*, and belongs to the natural order Leguminosæ. It is known popularly as the Red Bud or Love Tree. It is a native of the South of Europe and a large area of Asia. It is grown in standard form in shrubberies in the south of England, and, where the wood ripens well, is covered with short racemes of purplish red Pea-shaped flowers in advance of the leaves. These are 3 or 4 inches wide, and somewhat kidney shaped, pale bluish green on the upper surface, and sea green below. It is a low growing tree, 15 to 20 feet high, with a flattish round spreading head, distinct from all others, both when in flower and full leafage. It might succeed as a standard in a sheltered position in your garden. Not very far distant from you we remember one being grown against a wall facing west, trained up the side and over the top of a doorway entrance from the kitchen garden to the flower garden of an old Ivy-covered mansion. If it is not there yet some modern "improver" must have cleared it away.

Arisæmas (*G. O. Lingard*).—If you turn to page 197 you will there find an illustration of *A. Wrayi*, together with a brief note, which will be of assistance to you. If you want further information write again.

Heating Water in Tanks (*Herts*).—We know of no better way of heating the cold water in tanks than that of having a hole drilled in the hot-water pipes close to the tank and putting a tap in the same. By turning on the tap sufficient hot water can be run into the cold to heat the latter to the required temperature. If a small tap will not allow the water to run quickly enough, use a large one. Obviously, the hot-water pipes must be filled as soon as enough water has been drawn out.

Making Edgings for Flower Beds (*Novice*).—The method usually adopted to have raised edgings to flower beds brought out to the edge of the grass is as follows:—First, the beds are well filled with suitable soil for planting, and at the time the edges are thoroughly moistened with water from the rose of a watering can. They are then brought out to the extreme limits required and trodden firmly, after which a practised workman pares off the inequalities with a sharp bright spade, leaving a perfectly smooth and even surface. The plants to be inserted, such as *Echeverias* or *Alternantheras*, are carefully planted without disturbing the smooth surface. These will assist in the support, and retain the upright character throughout the season. The inner lines of the beds must be planted afterwards.

Pests Found in Garden, Greenhouse, and Stove (*H. C.*).—The creatures enclosed in the box are myriapods of the family *Julidae* (commonly called snake millepedes), and the particular species *Julus londinensis*. It very closely resembles the earth millepede (*J. terrestris*), the chief difference being in the first named having the apex of the tail rounded, whilst in the latter the pre-anal segment is pointed. It feeds on dead or decaying animal and vegetable matter commonly, and also on roots of many plants, especially the young and tender fleshy rootlets, and on root crops, such as Carrots, Parsnips, Potatoes, Beet, &c., and has been found feasting on Strawberries. For outdoor crops sprinklings of soot, a peck per rod, and nitrate of soda, 1 oz. per square yard, on the ground have been found useful, also dressings of quicklime. For clearing the pests out of greenhouses and hothouses there is no better plan than trapping. Pieces of Carrot, Mangold, or Parsnip, preferably partially decayed, or with holes in them, form excellent baits, inserting them just beneath the soil, or even on the surface, covering very lightly with light, partly decayed material, such as litter or moss, examining the baits every morning, and destroying the pests secreted in the hollows of the substances. This we have found the best means of riddance so far as greenhouses, hothouses, and out-houses are concerned, accompanied, of course, with thorough cleanliness. Outdoors we have found a dressing of quicklime useful, this hastening the decay of the organic matter by which they are mainly encouraged.

Begonia Gloire de Lorraine (*H. S.*).—Like others of the fibrous-rooted race of *Begonias*, and particularly those of such free-flowering tendencies, there is sometimes a difficulty in getting cuttings quite free from flower buds. No trouble, however, need be experienced if plants are healthy, and time is allowed for shoots to rise from the root stems, which may not be until late in the spring. When the flowering period is past, rest and dry the plants somewhat; then cut them down to within a few inches of the soil, and if shoots spring up having flower buds in them do not use these as cuttings, but wait for a later growth. The plants do not need any special treatment beyond keeping the soil slightly dryer before and after being cut down. There is a loss rather than gain in cutting them down early with the view of producing good cuttings, as early growth will most likely produce flower buds. When the shoots are about 2 inches in length they may be taken off with a slight heel, and inserted singly in small pots, or round the sides of a larger size. Loam, leaf mould, and sand in about equal parts will furnish a suitable rooting compost, which should be kept only sufficiently moist to keep the cuttings rigid. In a warm and close propagating frame they would soon emit roots, but a watchful eye must be kept on them to arrest damp in the leaves, to which all softwooded *Begonias* are liable. Once rooted give more air, and the best conditions and attention circumstances permit, and by the autumn well furnished and freely flowered plants ought to be the result.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*H. G.*).—1, *Odontoglossum grande*; 2 *Anthericum variegatum*; 3, *Woodwardia radicans*; 4, *Freesia refracta alba*. (*F. S. C.*).—1, *Cyperus natalensis*; 2, *Grevillea robusta*. (*L. H.*).—The inadvisability of not posting packages of specimens for naming on a Saturday, which means they must remain in the post over Sunday, has frequently been adverted to. Please bear this in mind when you send again, as all your specimens were quite dead. (*H. S. C. P.*).—1, *Prunus sinensis flore-pleno*; 2, *Staphylea colchica*; 3, *Boussingaultia basseloides*; 4, *Deutzia gracilis*; 5, *Crassula lactea*; 6, *Goodyera discolor*. (*Nemo*).—*Veltheimia viridiflora*. (*Idem*).—1, *Angræcum sesquipedale*; 2, *Phalænopsis grandiflora*.

COVENT GARDEN MARKET.—MARCH 2ND.

FRUIT.

				s. d.	s. d.					s. d.	s. d.		
Apples, $\frac{1}{2}$ sieve	1	6 to 4	0	Grapes, lb....	...	...	2	0 to 3	0	
Cobs	21	0	22	Lemons, case ...	...	...	11	0	14	0
Filberts, 100 lbs.	0	0	0	St. Michael's Pines, each			2	6	5	0

VEGETABLES.

		s. d.	s. d.			s. d.	s. d.
Asparagus, per 100	...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4	
Beans, $\frac{1}{2}$ sieve	...	0 0	0 0	Onions, bushel	3 6	4 0	
Beet, Red, doz.	...	1 0	0 0	Parsley, doz. bnchs.	2 0	3 0	
Carrots, bunch	...	0 3	0 4	Parsnips, doz.	1 0	0 0	
Cauliflowers, doz.	...	2 0	3 0	Potatoes, cwt.	2 0	4 0	
Celery, bundle	...	1 0	0 0	Salsafy, bundle	1 0	0 0	
Coleworts, doz. bnchs.	...	2 0	4 0	Scorzoneria, bundle	1 6	0 0	
Cucumbers...	...	0 4	0 8	Seakale, basket	1 6	1 0	
Endive, doz.	...	1 3	1 6	Shallots, lb.	0 3	0 0	
Herbs, bunch	...	0 3	0 0	Spinach, pad	0 0	0 0	
Leeks, bunch	...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve	1 6	1 9	
Lettuce, doz.	...	1 3	0 0	Tomatoes, lb.	0 4	0 9	
Mushrooms, lb.	...	0 6	0 8	Turnips, bunch	0 3	0 4	

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.				
Arbor Vitæ, var., doz. ...	6	0 to 36	0	Ferns, var., doz. ...	4	0 to 18	0		
Aspidistra, doz. ...	18	0	36	0	Ferns, small, 100 ...	4	0	8	0
Aspidistra, specimen ...	5	0	10	6	Ficus elastica, each...	1	0	7	0
Azalea, per doz. ...	24	0	36	0	Foliage plants, var., each	1	0	5	0
Cineraria, per doz. ...	8	0	12	0	Hyacinths, doz. pots ...	8	0	12	0
Cyclamen, per doz. ...	9	0	18	0	Lilium Harrisii, doz....	12	0	18	0
Dracæna, var., doz. ...	12	0	30	0	Lycopodiums, doz. ...	4	0	6	0
Dracæna viridis, doz. ...	9	0	18	0	Marguerite Daisy, doz. ...	6	0	9	0
Erica hyemalis, per doz ...	9	0	15	0	Myrtles, doz. ...	6	0	9	0
„ gracilis, per doz. ...	6	0	9	0	Palms, in var., each...	1	0	15	0
„ various, per doz. ...	8	0	12	0	„ specimens ...	21	0	63	0
Euonymus, var., doz. ...	6	0	18	0	Pelargoniums, scarlet, doz.	4	0	6	0
Evergreens, var., doz. ...	4	0	18	0	Tulips, various, doz. bulbs	0	9	1	6

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2 0	to 4 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Arum Lilies, 12 blooms ...	2 0	3 0	Mimosa or Acacia, bunch		
Asparagus, Fern, bunch...	1 6	4 0	(French)	0 9	1 0
Azalea, dozen sprays ...	0 4	0 8	Narciss, white (French)		
Bouvardias, bunch ...	0 6	0 9	dozen bunches	2 6	5 0
Carnations, 12 blooms ...	1 0	3 0	Orchids, var., doz. blooms	1 6	12 0
Daffodils, doz. bunches ...	3 0	8 0	Pelargoniums, doz. bnchs.	6 0	9 0
Eucharis, doz.	3 0	5 0	Roses (indoor), doz....	0 6	1 0
Euphorbia jacquiniæflora,			„ Red, per doz.	4 0	6 0
per bunch	1 0	2 0	„ Tea, white, dozen ...	1 0	2 0
Gardenias, doz....	5 0	8 0	„ Yellow, doz. (Perles)	1 6	4 0
Geranium, scarlet, dozen			„ Safrano(English) doz.	1 0	2 0
bunches	4 0	6 0	„ Pink, dozen	4 0	8 0
Hyacinths (Roman) dozen			Smilax, bunch	1 6	2 0
bunches	4 0	6 0	Snowdrops, 12 bunches ...	0 9	1 0
Lilac (French), bunch ...	3 0	4 0	Tuberose, 12 blooms ...	0 6	1 0
Lilium longiflorum, 12 blms	4 0	6 0	Tulips, dozen blooms ...	0 6	1 0
Lily of the Valley, 12sprays	0 6	1 3	Violets, dozen bunches ...	0 6	1 0
Maidenhair Fern, dozen			„ Parme (French),		
bunches	4 0	8 0	bunch	3 0	4 0
Marguerites, doz. bunches	2 0	3 0			



THE DISTRICT ANALYST.

We live in the golden age—the age when a beneficent Government provides us with privileges and opportunities at our very door. (N.B.—This is not meant as a joke.) The district analyst is one of the outcomes of Government care. We do not wish to give Government all the credit for this step in the right direction, for it was only after constant effort on our part that the Bill touching fertilisers and feeding stuffs became law. But how many of us have been interested in this move? We have seen large posters referring to the matter on our notice boards for several years now. How many of us have stopped to read them? True, the type was small, and the matter looked uninteresting; but still that is no adequate reason for our negligence.

Possibly, if we thought at all, we considered the matter had no interest for us, and thus passed on one side. But here was the mistake. The Bill is framed for the benefit of all farmers, great and small; and, dare we add, it is the small man who should be the most benefited, if he only knew how to set about it. The larger transactions

of the 1000 acre farmer form his safeguard. A man of that standing deals only with large, well-known firms, whose word is their bond, and who would scorn to sell anything on false pretences.

Then again, even should a large order be placed in the hands of manufacturers of doubtful reputation, they would hesitate long before committing themselves, judging—and judging truly—that in case of any doubt the large farmer would not hesitate to avail himself of analytical aid, provided cheaply through his membership with the R.S.A. or other kindred society. We say again, it is to the small buyer that the Act should be of the most service. Presumably, he is a shrewd man, but not quite up to all the tricks and devices of unscrupulous dealers; he does not quite know the exact nature of the action of the tillages he buys; if the cake does not feed quickly he puts it down to the fact that his beasts are poor doers, or not so well bred as his richer neighbour's.

The agent was so pleasant and civil when he went to buy—ready to take off discount, and there was a capital glass of sherry in the corner cupboard, and there was much talk of the silver cups offered for the best root crops, and the good dinner and speeches at the nearest hotel. If the man knew the world as he knows his fields, he would see that all these cups and dinners and sherry wine had to be paid for by some one, and that it was out of his pocket and his equally simple neighbour's that the money came.

We fight shy of "bonus" goods, and of those shops that deal in free gifts, and yet it has taken us some years to see through the soft blandishments of the cheap cake and manure merchant. The first step towards effecting a better state of things is the knowledge of our need. As long as we think any sort of town garbage or blood mixture, or patent Turnip, Barley, or Potato manure is infallible, so long do we rejoice in our ignorance. Once we are convinced there is a better way, we shall not be far from the remedy. A clever farm foreman of our acquaintance—a man really who does his work well—was scandalised only the other day by his master's remarks on the subject of analysis. "Tak t' air to pierces and find out what it's mad' on! Lord Almighty niver meant us to kna; its runnin id fearce oi' Providence." Now it will be a lengthened labour to persuade that man that all compounds can be disintegrated and weighed to a minute fraction, and to the end of his life he would probably declare that the substance that made the greatest stink was the most perfect fertiliser.

We want in the rural districts some very elementary lessons on practical chemistry, and we hope and trust that the rising generation will not consider a man either fool or atheist who tries to know something of the internal structure of compounds in constant use on the farm. Now, we appeal to the listening ear and open mind. Why not protect yourself from fraudulent manufacturers, when you have the law on your side, and the method is so reasonable?

We begin with cake, and suppose, for argument's sake, we have not purchased our few tons from the best known makers. Their price list looked high, and in the confidence that "good wine needs no bush," they did not press for our custom, nor hold before our eyes glittering cups of silver, or the amber wine.

To the buyer cake is cake, and he supposes of necessity it must be pure. Has he ever looked at his invoice? Is the class of cake specified on it? If it be linseed cake have the matter in black and white. The Act compels the vendor to furnish a true description. A mixed cake must be sold as such; pure must mean pure. There must be no quibbling about commercially pure. A pure cake contains 95 per cent. of linseed, and no farmer who respects himself or the stomachs of his stock should be content with less.

The district analyst is always within reach. The fees may differ a trifle in various parts, but it is not large, and is often money well spent. Half-a-crown is about the figure, not a very killing matter. You doubt your cake just delivered does not correspond with the invoice description. The analysis must be made within ten days of receipt of invoice. The seller must have three days' notice of your intention that he or his representative may be present when samples are taken for analysis. Three samples are necessary—one retained by buyer, one by seller, and one sent to the analyst. That to the latter

must be accompanied by invoice or any other particulars bearing on the subject.

In the case of cake, where the purchase amounts to a ton, three must be selected—ground or crushed, and well mixed; any mouldy or unsuitable portions must be included in the sample, and from this bulk the three samples should be drawn, not less than 1 lb. in each lot. For feeding meals or grains, or manures in bags, three bags at least should be thoroughly mixed on a clean floor, and from that bulk the samples taken. In case the seller be not present, a competent witness must be there to see fair play, and to initial the bag or package containing his sample. All this may seem a bit tedious and red-tapey to the average farmer, but once let it be known that he only buys cakes, feeding stuffs, and manures on guaranteed analysis, and he may rest assured that for the future he gets the full value of his money. The ten days' practice may seem but a short time, but the Act is for the benefit of the vendor as well as the buyer, and we have seen cakes and feeding stuffs kept in such dog-holes, that there was no help for anything but quick deterioration, and it is not fair to saddle the seller with faults arising from the culpable purchaser's neglect.

WORK ON THE HOME FARM.

Showers of snow and 12° of frost on two successive nights remind us that it is yet but February and not April or May. We can do without the frost now, but in default of rain a little snow would be beneficial to help the Turnip land to harrow down better. Some of it has ploughed up rather knotty, and as it is very dry a nice soaking would make it fall like lime. Not much spring corn has yet been drilled, but March is considered early with us. We intend getting as much sown as possible during the next fortnight, as good a seed bed may not be available later on.

Wheats are stronger than ever, and during a long drive we saw many fields that we could hardly believe to be Wheat, so big were they, and we thought how much they would benefit from a good harrowing.

"What to sow?" is a difficult question to answer, but a decision must be come to. As to Barleys, Standwell and Goldthorpe did best last season, and there is a run on them for seed, but we do not like to desert our well-tried friend Chevalier, especially for later sowings; the other two varieties must be sown early if at all. We find Black Tartarian Oats difficult to beat. We are convinced they are still the best for yield, and they always command a fair price. The Garton White Oats that promised so well seem to have deteriorated very rapidly; last season a large number of grains did not properly develop, and they seem very liable to the attacks of insect pests. They are much finer in quality than previously, being thinner in the skin.

Until this frost we were getting on capitally with fallows. We had been able to burn a crop of twitch and get another one (we hope the last), worked to the top. Now we shall have to wait a little. Potatoes are a very slow trade at present, and few are being sent off; the markets are full of foreign, which, though of poor quality, fill up a gap. This frost may check arrivals and harden prices again.

We are preparing land for again planting, and shall commence ridging immediately, weather permitting. The sets are sprouting in the pies, and they would be better placed in the ground to be getting root-hold before the time comes for the top to make its appearance above ground. We are sowing kaimit now and harrowing it in before the ridging process, it will thus become well mixed with the soil.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					-IN THE DAY.				Rain.
1898.	February. .	Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun	On Grass	
		inches	deg.	deg.		deg.	deg.	deg.	deg.	inches.	
Sunday	20	29.304	43.2	41.5	W.	40.2	45.9	33.3	81.9	28.4	0.044
Monday	21	29.199	29.2	29.2	N.E.	39.5	36.0	24.3	42.8	22.9	—
Tuesday	22	29.370	33.7	32.4	N.E.	38.2	42.9	28.9	69.0	28.1	—
Wednesday	23	29.774	36.2	34.9	N.	38.0	44.9	32.1	82.1	27.1	0.021
Thursday	24	30.114	33.6	31.9	N.	38.0	44.1	30.1	80.0	25.8	—
Friday	25	30.138	33.1	31.6	N.W.	37.4	46.8	26.9	72.0	22.6	0.109
Saturday	26	30.045	37.8	35.6	W.	38.0	48.4	32.9	86.1	29.0	—
		29.706	35.3	33.9		38.5	44.1	29.8	73.4	26.3	0.174

20th.—Dull, with frequent rain in morning; intervals of bright sun in afternoon.

21st.—Fog till about 11 A.M.; then fair, with gleams of sun between 2 and 3 P.M.

22nd.—A sprinkle of fine snow between 7 and 8 A.M.; generally sunny from 10.30 A.M.

23rd.—Bright sun from 9.30 A.M. to 3.30 P.M., but slight showers at 4 P.M. and 10.30 P.M.

24th.—Generally bright and sunny, but occasional cloud.

25th.—Generally sunny, but overcast in evening.

26th.—Rain from midnight to 2 A.M.; brilliant day and night.

Weather still very dry, and colder than any other week this year.—G. J. SYMONS.



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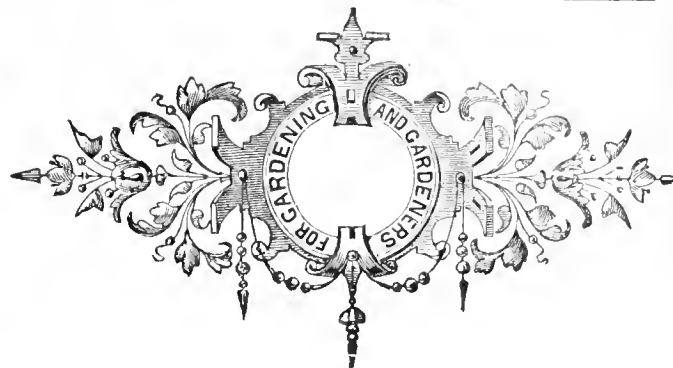
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Journal of Horticulture.

THURSDAY, MARCH 10, 1898.

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SPRING.

WITH all the charms incident to the season Spring sometimes has an unkind welcome. Winter yields not the sceptre without a struggle, and many are the combats between the two. There are advances and retreats on both sides; days of sun and soft rains, days of gloom or snow-showers; nights of mildness and calm, and nights of frost or storm. Still, inch by inch Winter has to yield, and all the time the signs of the victory of the younger season are evident, for

"Through wood and stream, and field and hill and ocean, A quickening life from the earth's heart has burst."

The very name of Spring brings us a message of gladness and of hope. No other season has this power in so great a degree. In summer we know that the year is speeding fast and that the shorter days are not far off. In autumn, though we are reaping the harvest of the toil of the past, we know that winter is at hand to despoil us of our store; but in spring we are in our youthful days again, and the garden's year is before us to enjoy.

The earth is throbbing with life, soon to assert its power in spite of icy winds. These tiny seeds, the germs in some of which one can scarce discover, must soon feel its impulses, and die only to live anew in a higher creation. Think of all that Spring means—of its work, its beauty, and its significance—and then perhaps you will have to confess the pen too feeble to adequately portray them.

Wherever we go we see the beauties of the time. In the woods the trees bud forth into delicately tinted leaves, and the ground below sparkles with Nature's floral gems. The fields and meadows assume their most verdant garb, and by the streams plants push up their succulent stems and leaves of many forms and shades. Chaucer's Daisy, Wordsworth's Celandine, Herrick's Primrose, with many other flowers, are astir and welcome us by the wayside or the dell. The world beyond our gardens is, in truth, very beautiful, and he who could tell its charms would be gifted indeed.

But our tale is more of the garden than of the fields, and woods, and dells. It ought to be, as it

were, the quintessence of the graces and charms of the floral world in spring. Golden or white and yellow Daffodils nod gracefully to each other; Crocuses spread open their lustrous flowers to the call of the sun; Violets delight us with their delicious fragrance even more than by their simple beauty; Forget-me-nots look up with sparkling eyes to the heavens above, whence their colouring came; queer, quaint Snake's Head Lilies from quivering stems sway to and fro their chequered bells, and stately Crown Imperials look disdainfully down upon them, as if denying that they may claim to be cadets of their noble race. Blue Scillas and the Glory of the Snow are bright companions for the Grape Hyacinth, with its clusters of blue and pearly bead-like flowers. Like well-drilled regiments stand in gardens where they are grown the prim and waxy Hyacinths, and Tulips in brilliant array salute us as the winds of spring come past. Gay Anemones, golden Alyssum, white Arabis, purple Aubrietias, powdered Auriculas, sweet Primroses, showy Polyanthuscs, and a host of other flowers, are called into birth by the sweet springtime.

What can we say of the attractiveness of orchards and shrubberies? Apples, Pears, Cherries, and Plums give us clouds of white or rosy tinted flowers, and hopes of fruit in later days; add to these the wealth of flowering trees and shrubs in wonderful variety, of stature, form, and colour, then will it be admitted that they impart an aspect all their own to the diversified beauty of spring. So far we have dwelt upon the more attractive aspects of the season, but we cannot end thus. We must not be mere lotos-eaters, doing naught but enjoy the pleasures of the time among the blossoms. There is work to be done, work which brings with it much pleasure, as we can see from the many who follow gardening not for gain of money, but for love. There is pleasure in turning over the fresh soil; in making the garden trim and neat; there is pleasure in sowing even the commonest seeds, for we can think the while of their future growth. What though they only produce the homely Onion, the curled Parsley, or the other products which minister to our creature wants? All life is not play. "The trivial round, the common task," if well performed, bring enjoyment in their train. Yet we cannot but think 'mid all our pleasure of the overburdened, who, in undermanned gardens, have to toil from daylight until dark. Dig! dig! dig! is the refrain which is so often in their minds. Think, we pray, ye who have such gardens, and see that to none of your employes will the happy time of spring become a crushing weight—a season to be dreaded—because of the excessive toil it brings. It is such to many.

And, ere we close, let it be said that much of the garden's year depends upon the spring. If the tide be taken at the flood with timely forethought it will be well for all concerned. Plans thought or carried out too late result in eyesores or failures. Wise prevision will prevent this, and will see that little is left unprovided for. Still, with all, disappointments await. Blossoms may be blighted, flowers and fruit may fail, vegetables may be unsatisfactory. These things, much as we dislike them, generally bring their lesson.

As has been said, "To the brave man good and evil fortune are as his right hand and his left; he makes use of both." Misfortune never comes empty handed, though the gift be hard to find. We began with joy; we end with a homily. In life these are interwoven. Spring is full of joy yet full of instruction. He will indeed be wise and happy who can read its lessons aright.

THE PROSPECTS OF GARDENERS.

FORTUNATE it is for the prosperity of this island that the inherent love of gardening is as strong in humanity to-day as when vegetation flourished in the "Fair Garden of Eden." Throughout the land there is no lack of candidates to fill the many situations which become vacant in the horticultural world; indeed, in regard to private gardening, the sad side of the picture is that so many good men are unable to obtain such positions as they are undoubtedly well qualified to fill. The death of an employer, and the serious reduction of an establishment, throw out of employment many gardeners who in reality are in their prime, yet because they happen to be on the "wrong side of forty," are not regarded with favour when they apply for a vacant post. Considering how comparatively late in life the average gardener—who has been trained in good establishments—succeeds in obtaining a good head place, his best opportunities usually occur during the limited period of ten years. Things are not likely to improve in this direction, because we are passing through a period of evolution in gardening, which has been brought about by economic laws. There is, however, in my mind nothing to be alarmed at, we have only to accept things as they stand, and shape our course accordingly. Among gardeners, as among all other bodies, there are many grades. Some have been induced to take up the work because they possessed a thorough love

for it, and have been satisfied with securing a fairly comfortable place where the staff has never been a large one. For such men there are many openings during the worst times.

There seems to be a great future ahead, for the well-to-do middle class and the number of successful business men increases. These, at the present time, keep up their gardens in good style, and pay such wages to those employed in the gardens, that many a garden chief who serves a duke or an earl may well envy his contemporary in the smaller or less high-sounding establishment. For men with good cultural ability, who neither lack energy nor brains, there is a good field open yet; but for those who have false ideas of refinement, who think more of a name in regard to an employer than of substantial advantages in the struggle for existence at the present time, they are, I fear, likely to be "handled roughly." Let me try and make my meaning quite clear, and also to adduce the condition of affairs which lured many on to the fatal quicksands.

A large proportion of gardeners are drawn from rural districts, in which mansions and castles, surrounded by extensive gardens, are situated. The young men from the bothies are regarded with envy by the village lads, and the great ambition of many of these is to get into the hall or castle gardens, because it seems to offer the one opportunity to rise in life which the village affords. By persistent application, or perhaps the influence of a friend, they in time succeed in entering the—to them—charmed domain. Their ambition is not great, and in time they succeed in reaching their goal, in the shape of a place with two or three hands under them. In this they are contented and happy, and seem to have found their especial sphere in life. Now let us consider the case of another type of village lad—one brought up in fairly good circumstances, with an inherent love of gardening. Such see and envy the head gardener of some neighbouring lord, who happens to be fortunately situated in serving a wealthy, generous, and garden-loving employer. The youth takes the position of such a gardener as his model, begins his gardening career with a determination to reach a similar position himself, and makes up his mind that with that and nothing less he will be satisfied. He toils assiduously for years, makes work and study his chief considerations, and passes on steadily from one stage to another, till he has been foreman in some princely establishment for some years. Here he has given his chief every satisfaction, and the time comes to seek a responsible position for himself. His chief does everything in his power for the faithful worker, but he cannot make places, and so the weary years roll on, till, through being tired of what seems endless waiting, a position is at last accepted to take charge of some fine old garden, which "has been" well kept in its day, but through adverse circumstances dwindled down, till it is only a ghost of its former self. The expenditure in labour and material is cut down to the lowest possible point, yet the requirements do not materially decrease. The result is that a few years of this attempting to "make bricks without straw" ends in disgust with the whole business.

Still some are compelled to plod on because they lack the ability to adapt themselves to altered circumstances and strike out in a new direction. Fortunately, however, there are many bright examples who have shown what can be done, for by their foresight they have realised that gardening is not "decaying," but only changing in form; they have noted there is a greater demand than ever for good garden produce, that flowers, plants, and fruit are required in enormous quantities by the rising masses; that fact being grasped, their energy and pluck has induced them to strike out boldly; difficulties were of course met, but fought with determination and overcome. Some of these men to-day, instead of holding shaky positions on trust in their old age, have prosperous businesses of their own, in the conduct of which they can end their days in content, and bequests to their children. There have been failures of course in this direction, but any man at middle age ought to be able to judge of his capabilities, and act accordingly. Often the failure has been brought about by flying to the neighbourhood of London, where the market is often overstocked, while good openings occur in other parts to work up a local trade.

And now for a few words to the young who have settled to embark in some form of horticulture; to them I say, Do not be led away by the glamour of appearances connected with many private gardens. If you have energy and brains, get into one of the finest schools of horticulture in this country or the world—viz., a great market establishment. The appearance of such is often not so inviting as a private one, but the work is child's play compared with the drudgery that prevails in some private places. The wages given are better throughout, and to a good worker, not inclined to be a spendthrift, the prospects in after life are infinitely better, for the time has come when those who provide for the wants of the general public rather than for a special class, will reap the surest reward. The matter may be put in a nutshell in this way. In private gardens bricks are often expected without straw being supplied to make them with; in market establishments the necessary straw is freely provided, but the bricks—in the shape of good results—are not only expected, but also demanded.—ONWARD.



AN HOUR AT ROSEFIELD.

It was on one of the foggiest mornings in January that an attempt was made to reach Sevenoaks in time to insure a couple of hours amongst Mr. De Barri Crawshay's Orchids at Rosefield. However, fate in the shape of the South-Eastern Railway Company decreed otherwise, and the train was just one hour late. One hour, therefore, was at disposal, but short as it was it proved to be sufficient for much of interest to be seen both of plants in and out of bloom as well as hundreds of dried flowers.

Fortunately, Mr. Crawshay is a man of action, and before I had well got inside the door my overcoat and hat were off, and just fifteen seconds later we were busy amongst the dried blooms. These are pinned on trays, which fit in cases in the library, and from them the life history of many an *Odontoglossum crispum* can be read. Here will be the first flower after importation, there the second, and yonder the third, and so admirably have they been preserved that the development of the blotches and markings on some, with the improvement of sepals, petals, and lip of others, can be seen at a glance. Then there were the *Lælias*; but no time was to spare here, so the trays were returned and we made for the houses. This system of preserving specimens is a splendid one, and if the fates (and the S.E.R.) are propitious in the future it is the intention of the writer to devote more attention to them.

It is no doubt well known to the Orchid growing section of Journal readers that at Rosefield *Odontoglossum crispum* and *Lælias* are the specialties, and frequenters of the Drill Hall know well with what success they are grown. Purchases are constantly being made, and it is but reasonable to add that plants are with equal constancy being turned out as not coming up to the requisite standard. Mr. Crawshay has his ideals, and at these he aims with unswerving determination. A variety has to be well nigh perfect to be kept, and must be in some respects superior to any existing ere it receives a name. On this point the grower holds very emphatic views, with which we are in entire accord. He is of the opinion that no variety should be named unless it is either decidedly superior to, or perfectly distinct from, any in cultivation. In this he is quite right, for there are hundreds of Orchids and other plants named every year that ought never to have been so treated. At the same time, it is more than probable that the practice will be persisted in.

To name particularly all the best of the Rosefield crispums would occupy too much space; but if the list of certificated Orchids of the Royal Horticultural Society be turned to, many will be found, and this list alone testifies to the excellence of the stock. One thing is certain, which is, that Mr. Crawshay seldom brings plants to the Drill Hall without taking back with him either an award of merit or a first-class certificate. This will show that his ideal is a good one, and quite in consonance with the opinions of the Orchid experts, who are sometimes, and rightly, very hard to please. The condition of all the plants is very satisfactory; they are clean, bright, and look to be in splendid health. Some are young, and others have grown old in years, all stages being represented. There are tiny seedlings, and there is the first plant of *Odontoglossum crispum* that Mr. Crawshay ever had, and it is superfluous to add this is not for sale.

The *Lælias* were making a braver show than the *Odontoglossums* when this visit was paid, for several forms of aneeps were in flower. Here again it was evident that only the best are wanted, and several of the best varieties in cultivation are there comprised. A week prior to the journey a plant of *Lælia Amesiana*, Crawshay's variety, had been sent to the Drill Hall and had received an award of merit from the Committee. This is represented in the woodcut (fig. 32), and is one of the most beautiful varieties that has been seen. The petals are broad and of great substance, the colour at the base being white, which gradually deepens until at the tips it is bright rosy red. The lip, which is rather small, is a peculiarly deep velvety crimson. This is only one of many splendid Orchids that have emanated from the Rosefield collection, and it cannot for a moment be doubted that the owner will continue to send to the Drill Hall some of the handsomest members of these two families.

There are other kinds of Orchids grown, but to these the chief attention is given. By thus specialising Mr. Crawshay can grow both

to an exceptionally high degree of perfection, and attain the best results. Curious to relate, not a single *Cypripedium* is grown. Seedling raising is followed up closely, and interesting results may be anticipated from some of the crosses that have been made from time to time. The particular mention of these must, with the others, be postponed until a second visit has been made, and more space is at command.—H.

STOCKS FOR APPLES.

GRAFTING time has arrived, and amongst those who have to devote some portion of their labour to this operation attention is necessarily directed to the stocks most suitable for the purpose. The question, Which is the best stock for Apples? has often been discussed, opinions varying greatly with the experience of different observers, but decisions must be influenced to a great extent by the objects or requirements of the cultivator. It is agreed in a general way that the Crab or free stock is the best for standard and orchard trees, while a Paradise or

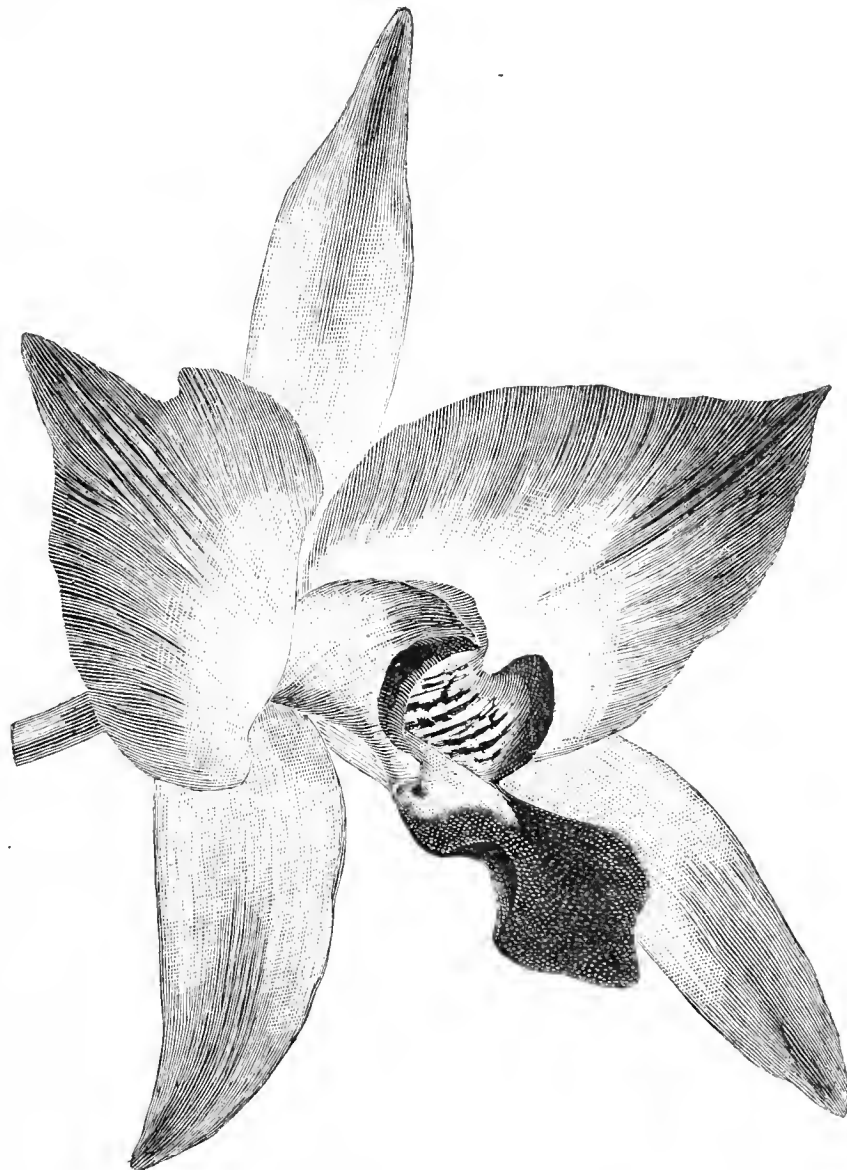


FIG. 32.—LÆLIA AMESIANA, CRAWSHAY'S VARIETY.

dwarfing stock is the most suited for bush or pyramid trees—i.e., garden trees. This is subject to some modification, for there are certain varieties which appear to prefer the Crab stock whatever be the form of tree grown, while others display a similar preference for the Paradise, just as we find with Pears on the Quince and Pear stocks, local conditions of either soil or climate in most instances exerting a material influence.

There must be some degree of similarity in growth between the stock and the scion, or short-lived and unsatisfactory trees will result. Thus a very vigorous variety is sometimes worked on a dwarfing stock with the object of reducing its growth and promoting earlier fruitfulness. This end may sometimes be attained, but it more commonly happens that the growth of the scion stem is out of all proportion to the stock stem, with a huge swollen juncture as the result, rendering it impossible for a tree to remain satisfactory so long as it would do with a better union. A heavy crop of fruit or severe injury to the foliage by insect attacks will often weaken such a tree to so great an extent that it remains stunted for the remainder of its life. I have had strong growing varieties on a Paradise stock five or six years old, of which the stem immediately above the juncture was nearly double the diameter of the stock, an obviously unsatisfactory state of affairs.

In the same way some of the weaker varieties of Apples are not improved by being placed on a Crab stock, as might be imagined; in the first place, it is often difficult to induce a weak variety to "take,"

either as a graft or bud, on a strong Crab stock; and even if this be accomplished the growth is frequently rendered irregular and unfruitful, being "forced," as it were, out of its natural habit. Varieties of medium growth more readily adapt themselves to either stock, and give the best results in healthy growth and good fruit. The extremes require careful study, and must be allotted stocks more proportionate to their growth.

The essential difference between the Crab and Paradise stocks is that one is a seedling and the other a layer, or plant derived from its parent by vegetative increase. In other respects, though the terms Crab and Paradise are employed as if they indicated a definite and fixed form, they are very misleading, and it is no doubt largely due to this that such varied opinions are formed as to the behaviour of particular varieties on the two stocks. The fact is, there is a great range of variation in the Crab stocks employed, as there also is in the Paradise stocks, and I have known Crabs employed for the same variety of Apple between which there was a greater difference in roots and growth than between some Crabs and some Paradise stocks.

I have had many thousands of seedling Crabs through my hands, and have found the growth of those from the same sowing differ enormously at all stages up to the budding or grafting period. For example, seedling Crabs of the same age when first transplanted will often range from 1 foot to 6 feet in height, and from half-inch to 2 inches in circumference, while the roots will vary from the strong downward fibreless growths, characterising the Crab, to spreading fibrous roots barely distinguishable from a Paradise. When scions or buds of the same variety are placed upon such varied stocks the results are frequently varied proportionately, and when the plants are distributed we have trees both on the Crab stock giving very different records in crop and growth, though the original cause of divergence is not then traceable.

A greater uniformity is obtained with Paradise stocks, because in all the best nurseries there is some special form which has found favour, and these are increased by layers, which give much more regularity and evenness in size and strength. But there are many so-called Paradise stocks in cultivation, and leaving out of consideration altogether the extremely dwarfing French types, which are discarded now in many places for general business purposes, if those from the leading nurseries are compared closely they will be found to differ materially amongst themselves. I have one that admirably suits a certain variety of Apple, and yet if the roots only were seen it might be taken to be a Crab; the only apparent difference being that the roots have a more horizontal direction, they are strong, hard, and fibreless, precisely like those of a hedgerow Crab.

In selecting young stocks for grafting it is the practice to employ those with clean, freely grown stems, and this is undoubtedly necessary; but in my opinion we begin at the wrong end, they should be selected by their roots in the first place. This applies more particularly to seedlings used for stocks, whether Crabs or Apples. Strong roots with a vigorous growth give us the "free" stock type—*i.e.*, abundant growth, later fruiting, and longer life. Plentiful fibrous roots, with moderate growth, afford us the dwarfing early fruiting Paradise type.

In a general way all seedlings possess more vigour as stocks than those raised from layers, and in some parts of England, especially in the cider districts, large numbers of seedlings are raised for this purpose; but it is done in an indiscriminate manner, and the results are varied or unsatisfactory in consequence. If seedlings are raised, not merely from one variety, but from the fruit of the same tree, considerable divergences will be observed; but there is a certain general character running through them which adapts them for use as stocks, though their produce as seedlings would be various. Two of the best varieties for yielding a proportion of seedlings of the Paradise type are Cox's Orange and King of the Pippins, and the fruit of these is too valuable to be devoted to seed-raising as a rule. But I have obtained a larger proportion of fibrous-rooted seedlings from these than from any others I have tried.

With regard to the form of trees, it may be said that personally I am strongly in favour of bush or pyramid Apple trees, either on the free or dwarfing stocks, because they have so many points in their favour; but experience has proved that where an intermediate form of the Crab stock can be chosen, it will give in the case of some varieties, of which Lane's Prince Albert is the best example that occurs to me on the moment, a stronger habit and better tree than the ordinary Paradise. For many weak and medium growers I have found nothing better than the Broad-leaved Paradise.

Budding is so generally practised now, that by some grafting is regarded as out of date; but when dealing with strong or old stocks the latter method is far before budding, as it will give a greater proportion of successes, and where there is a good root below and a clean union is formed, four to six strong buds starting in the season, it will be found at pruning time that the foundation of a well-proportioned tree is obtained, which would take at least another year to secure from buds.—R. R.

THE SCIENCE AND PRACTICE OF FORMING FRUIT TREES.

ABOUT the middle of February in forward seasons and warm localities the buds of fruit trees usually commence swelling; by the beginning of March, or from then to the end of the month, according to season and location, recently planted young bush and standard trees will have pushed the top buds more or less, and then, perhaps, be in the best condition for pruning in order to induce the production of vigorous growths from the pruning buds. I say, perhaps guardedly, for it would not be difficult to produce evidence of early autumn pruning tending to give satisfactory results in the following season, as the more or less activity of the juices during the autumn and mild weather during the winter are concentrated on the pruning buds—that is, they plump and make ready for a start in the early spring, whilst the roots callus at the clean cut parts, and the fibres form adventitious root-cells, or what may not inaptly be termed root-buds, for development into soil branches.

In most cases, however, early autumn planting is seldom practised, so that the physiological conditions foreshadowed do not commonly arise in the case of ordinarily planted young bushes and standards. The general practice is to wait until all the leaves are down, which implies planting in late autumn, during mild weather in winter and early in spring, or whilst the trees are quite dormant, more as a matter of convenience than involving any question of principle. Nevertheless, I am satisfied that the most suitable time to plant trees is in the early autumn, when most of the leaves have fallen, if not all, and the next best time early spring, when the buds begin to quicken.

By the first we secure to the tree the advantages of the descending current or transference of the plastic materials, and these secure a callus to wounds and even adventitious roots from fibres, and this without top growth. By the second the juices are then at such state of tension, and the conditions so favourable to the transference and diffusion of the stored plastic substances, that the growth is pushed upwards and roots downwards with such force and reciprocity as to become surely and quickly re-established. This applies alike to evergreen as well as to deciduous trees.

The November or early winter-planted tree has the advantage, as if the weather prove mild it will have the soil settled about the roots by rains, and thus in touch with the supplies of moisture and nutrition which prepare to grow afresh at the present season, as shown in the illustration (fig. 33, A), the cleanly cut roots callusing (*a*), and the terminal buds commencing to swell (*b*) all over the tree. These we get by this time (March), earlier or later, and then the question of pruning arises, if it has not already been done before the buds have commenced swelling. Under ordinary circumstances no harm is done by leaving the shoots unshortened until now, for if the greener parts of the shoots part with moisture on dry days they take it in during damp or wet periods, so that if there be any elaboration of matter, as there certainly is diffusion and transference of plastic materials, the balance of benefit is found by retaining the shoots intact. Besides, if the winter be severe, and the summer previous has been cold, the wood may not be ripe, hence pruning at planting means wounds liable to injury from frost in greater degree from the more moisture resting on them than there would be if the growths were not shortened; so that in the latter case the soft wood suffers instead of the more ripened, whilst any keen frosts in the early spring act on young wood instead of the basal parts of the shoots. Rose growers practise this as a safeguard against spring frosts, and it is quite sound in theory, and satisfactory in practice.

The tree portrayed (fig. 33, A) is a fair sample of a one-year-pruned bush. It has been headed as a maiden at (*c*), giving rise to several shoots—four strong ones (*d*), and six of less vigour (*e*), with a spur (*f*). It may be an Apple tree or a Gooseberry bush. The principle is the same, for it is a bush we want, and the only difference between that and a standard is in the stem. For the bush we cut the maiden tree at a foot from the ground, or at most 18 inches, to get, in the case of the Apple, the branches well above the ground so that the sun can reach the soil, the branches not interfering with feeding and cultural operations, nor the fruit splashed by rains. For the standard we train up the maiden to a height of 3 feet for a half, and to 6 feet for a full standard, and at one or other of those points cut off its head; thus there is no difference between the head of the bush and that of the standard. The bush may be regarded as the tree of the future, the plantation instead of orchard, as all its requirements can be attended to from the ground without aids of a time-wasting character. There are several modes of treating such tree.

1, THE RECIPROCITY OF SERVICES METHOD.—Leave the weak and short (*e, f*), and shorten the long and strong shoots (*d*). This shortening is imperative for shaping the tree, as the space must be utilised to give satisfactory returns by having branches for fruit production covering it equally, and with the same admitting light and air to pass freely into the head; therefore they must not be too close, especially in origination, this being a very common error, and the lower part of the tree ultimately worse than worthless from the overcrowding of limbs, and for a time of spurs.

To obtain free growth the strong shoots must be shortened about two-thirds of their length, or to *g*, making at least level with the short and weak shoots. In consequence of the shortening we get at least two vigorous growths from each, as shown in part outline, and smaller ones towards the basal parts. Thus there is no check to the root action, or rather no congestion of sap, for the short and weak shoots have growths equally forward with those cut away; therefore the reciprocity of action between roots and branches remains intact, and as the strong shoots have larger sap vessels, the flow is so full and strong into the buds left that the upper ones start vigorously, and soon draw the nourishment away from the weaker, the leaves being larger and the shoots altogether in the ascendant.

The cut in pruning is an important consideration. If the tree be of erect habit it will always retain the characteristic, but it may be made to grow somewhat outwards by pruning to an outside bud (*B, h*), while a tree of spreading growth can be made to grow inwards or more upright by pruning to an inside bud (*i*). In the case of a tree of pendant habit (*C*) pruning to an upside bud (*j*) induces growth upward, and shortening to an underside bud (*k*) tends still farther to promote the pendant habit

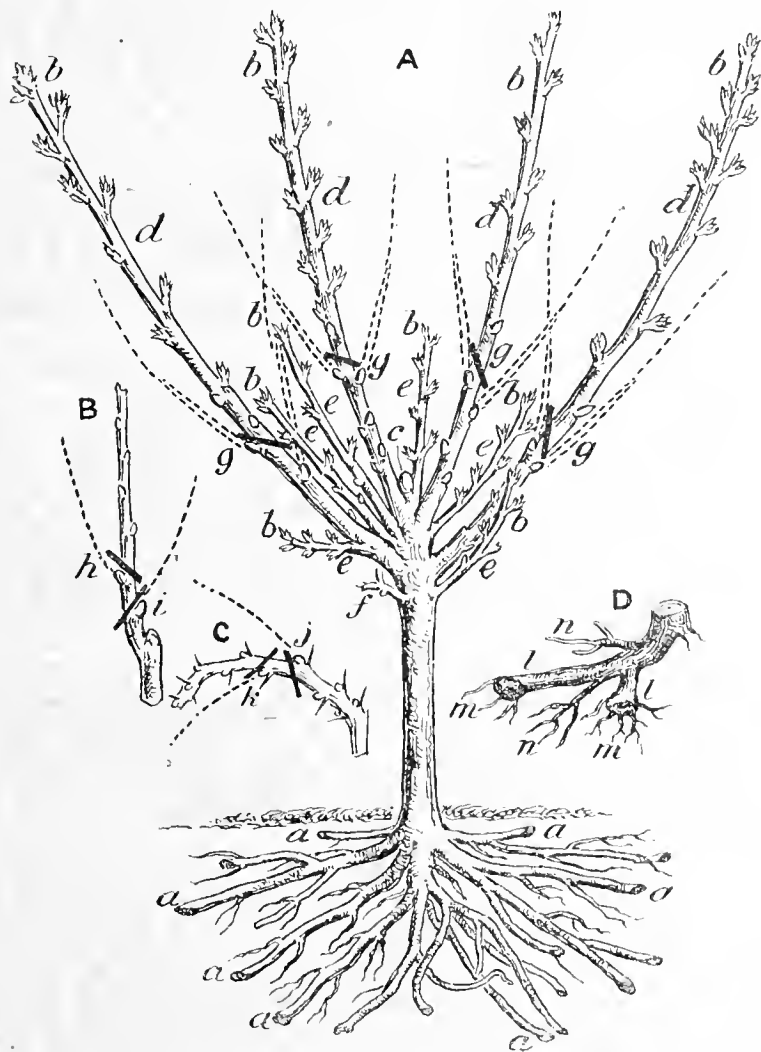


FIG. 33.—PRUNING RECENTLY PLANTED YOUNG FRUIT TREES.

References:—*A*, shorten the long and strong, and leave the short and weak shoots: *a*, roots callused; *b*, buds started into growth; *c*, point of heading maiden tree; *d*, long and strong shoots; *e*, short and weak shoots; *f*, spur; *g*, point of cutting back strong and long shoots. *B*, upright shoot: *h*, pruned to an outside bud; *i*, shortened to inside bud. *C*, semi-pendant shoot: *j*, pruned to upside bud; *k*, shortened to underside bud. *D*, roots: *l*, clean cut callused; *m*, young rootlets; *n*, young fibrils.

of growth. These small matters must have attention from the pruner, as they have an important bearing on the ultimate fashion and utility of the bush or tree.

By pruning when the uppermost buds are pushed or even have grown somewhat, and confining this to the strong growths, the young shoots on the part unpruned develop their leaves, and the roots then, if early planting has been practised, will also be moving (*D*), the clean cut roots (*l*) having callused and put forth rootlets (*m*), while the fibrous roots have also made some healthy fibrils (*n*). These keep in touch with the leaves on the unpruned shoots and give a fibrous formation, whilst later the strong shoots come on the pruned, and then the roots spread wider and deeper, being more or less strong in accordance with the growths. The tree thus has secured to it both a fibrous and extended root formation.

The practical point at present is to shorten the long shoots of recently planted trees with necessarily shortened roots, such as that represented. Thousands of such trees have been ruined by leaving the young branches intact. It may be said, "They can be cut back the second year." Yes; but as a matter of fact not one in a hundred is then cut back, and that is where the danger lies. Safety rests in attending to the matter now for laying a good foundation for future thrifty trees. The small shoots (*e*, tree *A*, fig. 33) are to be removed when growths are freely extending from *g*, as foreshadowed by the dotted lines.—G. ABBEY.

(To be continued.)



— WEATHER IN LONDON.—Though we have had frost, snow, and hail since our last issue went to the press, we have had no real winter. The snow that fell on Thursday, Friday, and Monday did not remain more than a few moments. There have been sharp frosts on two or three mornings, and clear cold days. Sunday was particularly bright and invigorating, but since then cold easterly winds have prevailed. Throughout the whole of Tuesday the wind was bitterly cold, but during the night it became milder. On Wednesday it was clear and fresh.

— WEATHER IN THE NORTH.—Dry seasonable weather has marked the first eight days of March. The days have generally been clear in the former part with duller afternoons. On every morning but that of the 6th frost has been recorded, increasing from 2° on the 1st to 9° on Tuesday morning, when the rime was very dense and the hills retain their covering of snow.—B. D., *S. Perthshire*.

— FLORELEGIUM HAARLEMENSE.—Fascicle 5 of this work is before us, and the plates well maintain the promise of the earlier numbers. It is to be hoped the promoters are receiving the support they deserve for the excellent manner in which they are conducting their work. The part before us contains Hyacinth Hadyn, Tulips Duchesse de Parme, Thomas Moore and Ophir d'Or, with Nareissi telamonius plenus, incomparabilis albus plenus, and incomparabilis plenus sulphureus. Each plate is accompanied by explanatory letterpress. We may again mention that the publisher is De Erven Loosjes, Haarlem, Holland.

— ROYAL CALEDONIAN HORTICULTURAL SOCIETY.—The prize list and rules of the two exhibitions that are to be held under the auspices of the above Society are now before us, and the prizes should be good enough and the rules simple enough to insure two excellent displays. Both will be held in the Waverley Market, the spring show on April 6th and 7th, and the autumn one on September 14th and 15th. The latter is the more important, and comprises 263 classes with a total of £366 in prize money. The Edinburgh display of fruit is almost invariably an excellent one, and this schedule gives particulars of 117 classes all devoted to fruit. Schedules and all particulars may be had from Mr. N. Bryson, 18, Waverley Market, Edinburgh.

— NATIONAL AMATEUR GARDENERS' ASSOCIATION (LIVERPOOL BRANCH).—The first meeting of the season was held in the Common Hall, Hackins Hey, Liverpool; the newly elected President, J. H. Drake, Esq., presiding over a large attendance of members. The Chairman gave a short address, chiefly for the encouragement of those members who have not as yet become exhibitors, and no doubt his remarks will bear good fruit, for there is need of more rivalry at the exhibition table. An interesting display of spring bulbs was made; Mr. J. M. Smyth winning with two miscellaneous exhibits, Mr. Rees with Hyacinths and Azaleas, Mr. Cangle with Calla blooms, and Mr. Drake with an Orchid for a special prize. The President has kindly offered a special prize of 5s. at each of the meetings, whilst other gentlemen have given excellent special awards. An attractive syllabus has been arranged for the ensuing season. It is intended to hold a social evening at the end of the month.—R. P. R.

— ISLE OF WIGHT.—The monthly meeting of the Isle of Wight Horticultural Improvement Association was held at Newport on Saturday. Dr. J. Groves, B.A., J.P., presided over a large meeting present to hear a paper read by Mr. J. H. Perkin, The Gardens, Los Altos, Sandown, on "The Cultivation of Asparagus." Mr. Perkin, unfortunately, could not be present, and the paper was read by the Chairman. An interesting and profitable discussion ensued. Mr. R. Parsons received the Association certificate for cultural merit for a collection of Cyclamens. A vote of condolence was passed with Captain Eveleigh, an honorary member of the Association, in the loss of Mrs. Eveleigh. The questions as to forms of certificates for the forthcoming Island shows and the printing of the monthly proceedings for circulation amongst the members were, after some discussion, deferred to another meeting. It was decided that the April meeting should be held at Shanklin, and take the form of an exhibition of spring flowers. The arrangement of excursions for the forthcoming season were left with the Secretary. At the close of a most pleasant and instructive meeting twelve new members were elected, which brings the total to 250.—S. H.

— COMMUNICATIONS.—In consequence mainly of the considerable amount of space—though not, we think, too much—required by the description of Hatfield, the publication of several interesting communications and illustrations has had to be unavoidably postponed, but the contributors are equally thanked for their co-operation, whether their productions are inserted in the present issue or deferred.

— A VISITOR to Folkestone writes:—"There are Roses in bloom in some of the gardens here, and the new leaves of the Euonymus are almost as bright a gold as the Gorse on the banks. In a sheltered cottage garden down in the hollow, near Sandgate, there are Pansies in full bloom, as well as Polyanthus, Primulas, Daffodils, Primroses, and Bachelors' Buttons. The flower-girls are selling Mignonette, Stocks and Wall-flowers, grown at Sandwich, and of a delicious sweetness known only to home-grown flowers."

— A CURIOUS CASE OF PEAR FRUCTIFICATION.—I have a Jargonelle Pear about seven years old, on a west wall, and in robust health. By some means, seemingly about three years since, the bark got removed all around for the space of an inch or so a short distance from the main stem of one of the largest branches. For several years fruit has been pretty evenly distributed over the whole tree, but this year there are more than twenty whorls of fruit buds on the branch detached by the cutting of the bark from the main stem, and not a fruit bud on any other branch. How is this accounted for? There is no appearance of sap circulation, except it goes through the seemingly dry hard wood, where the bark was removed.—W. J. MURPHY, *Clonmel*.

— FEBRUARY WEATHER AT DRIFFIELD.—Mean temperature at 9 A.M. (corrected), 38.12°. Wet bulb, 36.39°. Mean maximum, 44.5°; mean minimum, 33.75°. Highest, 55° on the 1st; lowest, 22.5° on the 21st. Mean of maxima and minima, 39.12°. Mean radiation temperature on the grass, 29.12°. Lowest, 19.5° on the 21st. Rainfall, 1.28 inch. Number of rainy days, eighteen. Greatest amount on one day, 0.28 inch on the 3rd.—W. E. LOVELL, *York Road, Driffield*.

— FEBRUARY WEATHER AT HODSOCK PRIORY.—Mean temperature of the month, 40.5°. Maximum in the screen, 58.1 on the 15th; minimum in the screen, 21.7 on the 25th. Minimum on the grass, 12.4° on the 25th. Number of frosts in the shade, nine; on the grass, twenty-two. Sunshine seventy-three hours, or 27 per cent. of the possible duration. Rainfall, 0.68 inch. Rain fell on twelve days; maximum fall, 0.22 inch on the 28th. Rainfall from January 1st, 1.13 inch; difference from average—2.33. Another mild and dry month, but with more frosts than in January.—J. MALLENDER.

— A WEATHER CONTRAST.—It is reported that on Saturday last the heaviest snowfall of the season was experienced in Scotland. In the central Highlands there was a continuous fall for several hours, and in some places snow lay to a depth of 8 inches. The Australian mail on Monday brought the following records of great heat. On December 30th, under severe shade conditions, 107.3° was registered at the Melbourne Observatory; and on January 11th a still higher record, 109.5° was reached. At Boort (Victoria) the shade register was 116°. We should prefer Scotland.

— WEATHER AT DOWLAIS.—The following is a summary of the weather here for the past month:—Rainfall, 3.49 inches, which fell on twenty-three days. Snow fell on four days. Maximum rainfall, 0.52 on the 5th. Mean maximum temperature, 42°; highest reading, 52° on the 14th; mean minimum, 29°; lowest reading, 17° on the 20th. Below freezing point on twenty occasions. The wind was in the W. and S.W. on sixteen days, and very variable on the other days. There were twelve sunless days. Very mild and open until the last twelve days of the month, during which the frost has been more severe, with at times brilliant sunshine in the daytime.—W. MABBOTT.

— THE WEATHER LAST MONTH.—February was much cooler than January, with sharp frost on the 21st, 22nd, and 23rd. The wind was in a westerly direction on twenty-four days. The total rainfall was 0.61 inch, which fell on thirteen days; and is 1.20 inch below the average for the month. The greatest daily fall was 0.11 inch, on the 17th and 25th. Barometer (corrected and reduced), highest reading 30.291 inches, on the 11th, at 9 P.M.; lowest 29.196 inches, on the 21st, at 9 A.M. Thermometers, highest in the shade 56°, on the 1st; lowest 20°, on the 21st. Mean of daily maxima, 45.82°; mean of daily minima, 33.21°. Mean temperature of the month, 39.50°; lowest on the grass, 13°, on the 21st; highest in the sun, 102°, on the 27th. Mean of earth temperature at 3 feet, 41.82°. Total sunshine, ninety-eight hours forty minutes, which is thirty-eight hours above the average. There were two sunless days.—W. H. DIVERS, *Belvoir Castle Gardens, Grantham*.

— ROYAL METEOROLOGICAL SOCIETY.—At the ordinary meeting of the Society, to be held, by kind permission of the Council, at the Institution of Civil Engineers, on Wednesday, the 16th inst., at 7.30 P.M., a lecture will be given by Mr. Arthur W. Clayden, M.A., F.R.Met.Soc., on "Photographing Meteorological Phenomena," which will be illustrated by lantern slides.

— NATIVE GUANO.—Once more the Native Guano Company favours us with a book of testimonials, which cover about seventy pages, and come from all parts of England, Scotland, and Wales, with some from the Channel Islands. Each year a fresh list is compiled, and each year brings abundance of good material for the book. The testimonials refer variously to flowers, fruit, and vegetables of all kinds, and the guano thus appears to be admirably suited for everything.

— "A STRANGE THEORY."—This (page 189) is indeed strange as physiological connection in the issues involved seems absent. If plant sap ebbs and flows as suggested, it can only do so when not in its state of stagnation in which it is deemed to be during winter. We do not ordinarily prune Vines least of all, when the sap is moving, and discrimination between the ebb and flow of tides during the dormant state of the sap does not seem imposed by any logic.—H. H. R., *Forest Hill*.

— SOWING TOMATOES FOR OUTDOOR CULTURE.—The present is a suitable time to sow Tomato seed thinly in a pot or box to raise a stock of plants for outdoor planting. They are better raised now than earlier, inasmuch as the seed germinates quicker, and the seedlings grow more sturdily under the influence of increased light and natural heat. Keep them close to the glass in all stages, and in as little artificial heat as possible after becoming well established.—E. D. S.

— "CARNATION MANUAL."—The second edition of the "Carnation Manual," which is edited and issued by the National Carnation and Picotee Society (Southern section) at the price of 3s. 6d., is a book that should be very valuable to all lovers of these beautiful flowers. There is a preface by Messrs. Martin R. Smith and J. Douglas, introductory chapters by the Rev. F. D. Horner, as well as articles of various points in cultivation by some of the best known specialists. The book, which is neatly bound in red cloth, may be procured from Mr. T. E. Henwood, Auricula Villa, Hamilton Road, Reading, for the price named, plus about fourpence for postage.

— HESSLE GARDENERS' SOCIETY.—A meeting of the above Society was held in the Parish Hall on Tuesday, February 1st (Mr. Geo. Picker, Hesslewood, in the chair), when Mr. Geo. Wilson, gardener to Sir James Reckitt, Bart., Swanland Manor, Brough, a well-known exhibitor of groups, contributed an excellent paper on "Grouping for Effect; What to Imitate and What to Avoid." The essayist commenced by describing the first group that he saw exhibited, which he said reminded him of a thatched roof with a gradual slope. Among the things he tried to avoid was making a group similar to what he had seen elsewhere; attempting to make a pattern; taking too many plants to shows; and being late in getting a start and overcrowding. The only thing to imitate, in his opinion, was Nature, and in trying to do this as far as possible the essayist attributed his numerous successes. There was a large attendance of members present, and a good discussion followed. Votes of thanks to the essayist and Chairman terminated the meeting.—G. W. G.

— ECONOMIC RESOURCES OF THE WEST INDIES.—A special issue of the "Kew Bulletin" embodies Dr. Morris' views on the economic resources of the West Indies, and a more interesting work on the subject could hardly be wished. The author accompanied the Royal Commission to the West Indies in the early months of last year; but apart from this visit, his intimate knowledge of the Islands qualify him to undertake the task. Each Colony has been dealt with separately, and every point has been brought out with a clearness that is not always found in works of a similar nature. That the Commissioners appreciated the efforts of Dr. Morris is proved by the note below, which appears towards the conclusion of their report:—"We have had in the course of this report to refer frequently to the very interesting and valuable survey supplied by Dr. Morris of the agricultural resources and requirements of the Colonies visited by us, which forms Appendix A in this volume. Dr. Morris's presence with the Commission has been of great advantage to us; no adviser could have been assigned better qualified, both by general and local knowledge, to assist and inform us in regard to botanical and agricultural questions. The report which he has prepared bears witness to the closeness of his study of these questions, and the assiduity with which he has collaborated throughout the course of our inquiry to further the purposes of the Commission." The entire work may be procured from Kew for 1s. 6d.

Hatfield House, the Seat of the Marquis of Salisbury.

WHO has not heard of Hatfield? To the populations of the English speaking world, and to many millions besides who speak their own mother tongues, the name of Hatfield is known—not perhaps so much as a magnificent estate, but as the home of one of England's greatest statesmen, whose reputation will be handed down to the future by historians, even as the doings of his ancestors have been passed down to us. Look far back into the pages of history, and the family achievements in the political arena will be found in page after page, dynasty after dynasty, century after century, and when you reach the time of the maiden monarch you will find Sir William Cecil, afterwards Lord Treasurer Burleigh, one of the leading politicians of the time. To-day history is repeating itself, for the Marquis of Salisbury, a descendant from the Elizabethan Minister, occupies the highest position in Victoria's Parliament. The reigns of both these rulers have been beneficent, and in the glory of each reign is reflected the glory of the Cecils. It is not proposed, however, to trace the history of the family back from the year 1558 to 1898, at least only so far as it affects the subject of the present notes

history of gardening for nearly three centuries. It, doubtless, has had its vicissitudes, but these lend charm to the page and make the picture painted in the mind more beautiful still. So interesting is the history of Hatfield that we shall venture beyond the bounds of horticulture, but not so much so, it is hoped, as to make the recital uninviting to our readers.

As has been said, Hatfield came into the possession of the Cecils just after the death of good Queen Bess, but prior to that it was a place of note, and during the reign of this monarch it was a royal residence. For about seven hundred years Hatfield has been widely known, and a part of the old Palace, which, during the reign of Mary, was occupied by Elizabeth, who was practically a prisoner, still remains, and is shown in the photographic reproduction (fig. 34). The portion there depicted was the banqueting hall, which is now used as a stable, providing adequate accommodation for upwards of two dozen horses. The roof of this structure, which is comparatively lofty, has the appearance of being of oak, though one good authority states it to be of Spanish chestnut.

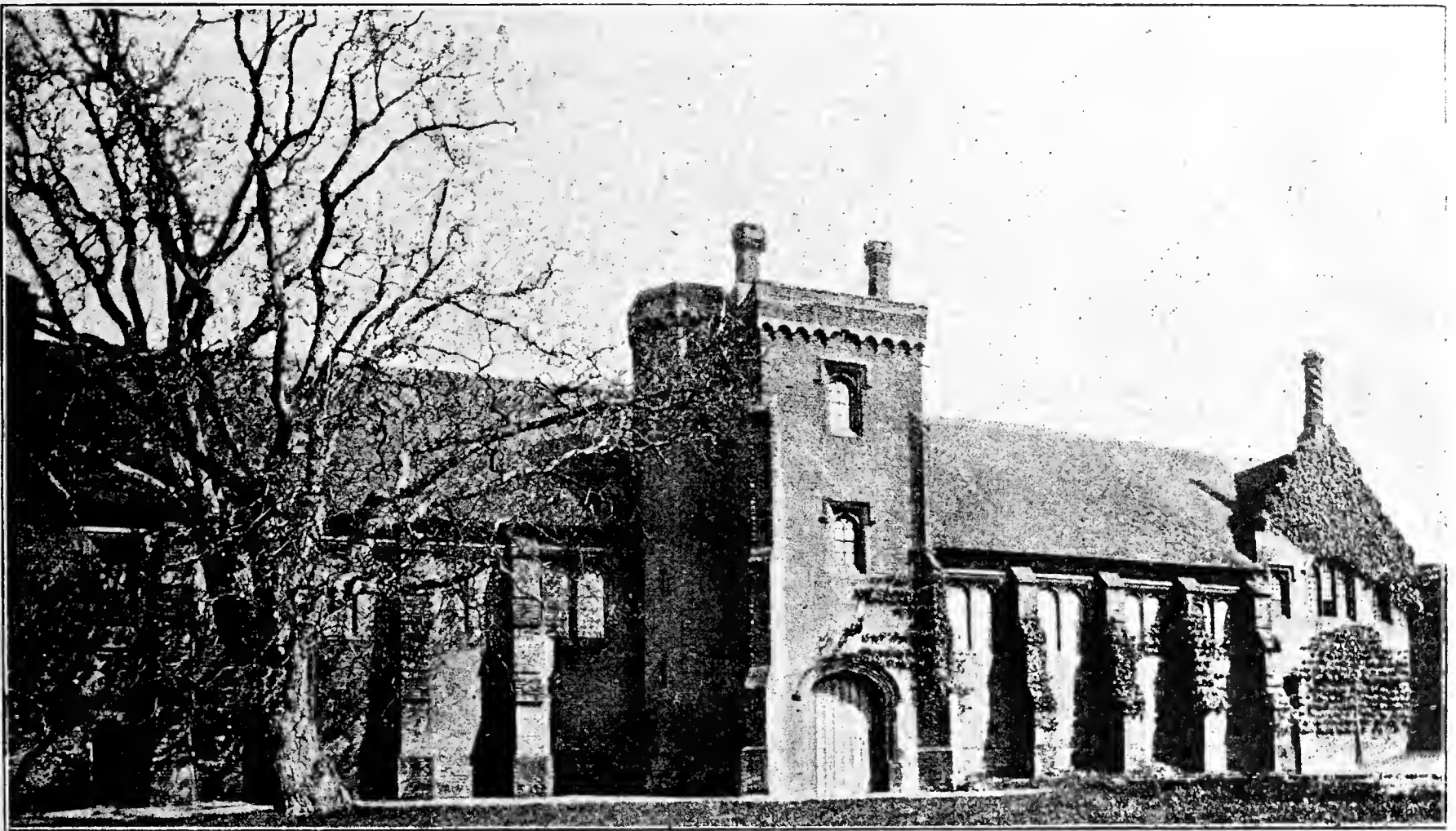


FIG. 34.—THE OLD PALACE AT HATFIELD.

—namely, Hatfield House, which came into possession of the family shortly after the accession of James I. to the throne. But let us pass for a moment from the historical features to those phases that come more within the social province.

To travellers by the G.N.R. Hatfield has become familiarised by the conservatory, of which a glimpse may be caught as the train speeds past on its journey north or south; indeed, to many going in the latter direction it is the signal that London will be reached in about twenty minutes, and therefore preparations must be made for detrainment. But few of those passing thousands have any conception of the magnificent house, the superb park, the ancient buildings, the relics of bygone ages which may be seen on every hand. To the one who is wholly interested in historical detail Hatfield would prove an almost inexhaustible storehouse, while the visitor who lives in the present will have his mind no less occupied in studying the several features of the house and park. In this connection one can re-echo the sentiment of Bishop Wilberforce, who said of Hatfield: "This is a place at once of historic interest and of present enjoyment." Truer words were never spoken than these, and none but a cultured mind could thus have summed up in a dozen words the description of a lordly estate. Arboriculturists would find here food for many a thought, while horticulturists could with little effort read in the estate a

In Saxon days the name was Hetfulle, and the estate belonged to the Saxon kings until it was given to the monastery of St. Etheldreda at Ely by Edgar. It became then a residence of the prelates, hence the name of Bishop's Hatfield, which it retains to the present day. From about the year 1108, which it will be remembered was during the reign of Henry I., it was the residence of the Bishops of Ely until the accession of the Merrie Monarch, but was occasionally used as a royal palace. Edward VI. lived there before he came to the throne in the year 1547, and in the fourth year after his accession conveyed it to the Princess Elizabeth, afterwards (1558) Queen Elizabeth. Even from these brief data it can be gathered that the old palace of Hatfield saw many changes and acknowledged many owners.

At a lecture on the old palace of Hatfield, Mr. Gunton, who can speak authoritatively, said the structure to which we have just been referring was erected by Morton, Henry VII.'s chief adviser, on the site of an earlier erection. Mr. Gunton went on to say, "Only the west side of the quadrangle, which composed the original building, now remains, however, for when the present mansion was built, the other three sides were sacrificed to make way for it. The architecture is noteworthy. Up to that time, as a consequence of the Wars of the Roses, defence was the first consideration in building, but now in these piping times of peace,

comfort being the primary object, the fierce battlements, keeps, and towers developed into mere ornament, so a strange mixture is the result. A specimen of indoor decoration still remains in an old room near the Gate House and tennis court, a black painting on a whitewashed ground. Morton marched well in the van of progress, for the palace was the first large house to be built entirely of bricks. Before this brick chimneys only had been used to stone houses, thus reversing a style in vogue at the present day. It was not until Charles I.'s time that the several apartments were converted into the one great hall as it at present exists." Samuel Pepys' impressions, as entered in his Diary on July 22nd, 1661, are worthy of citation here:—"I come to Hatfield before twelve o'clock, and walked all alone to the Vineyard, which is now a very beautiful place; and coming back I met with Mr. Looker, my Lord's gardener (a friend of Mr. Eglin's), who showed me the house, the chappel with brave pictures, and above all, the gardens, such as I never saw in all my life; nor so good flowers, nor so great Gooseburys, as big as nutmegs."

But if, as has been said, no artificial architectural glories of the Hatfield of olden days remain, many of Nature's monuments stand that must have existed a thousand years ago. These are in the form of Oaks, which are seen on every hand in the beautiful park. A history could, no doubt, be weaved round very many of them, and one at least has a story of its own. This is the celebrated Elizabeth's Oak, of which only about 12 or 15 feet high of shell remain. It is now enclosed by a paling, and one side of the bole has succumbed to the elements, cement having taken the place to help uphold this monarch of its kind. Tradition says that the Princess Elizabeth was seated under this very tree when the news was brought to her of her sister Queen Mary's death, which at once released her from a virtual prison, and made her Queen of England. The story further says that when the news was made known to her, she exclaimed in Latin, "It is the Lord's doing, and is marvellous in our eyes." It was here the Queen first showed that preference for Sir William Cecil, which extended until the statesman's death in 1598. From Mr. Gunton's lecture we also learn that it was in this great hall that Elizabeth held her first reception, and when she appointed Cecil to be her Secretary. In making the appointment the Queen said, "This judgment I have of you, that you will not be corrupted with any manner of gift, and that you will be faithful, and that, without respect to my private will, you will give me the counsel that you think best; and if you shall know anything necessary to declare to me in secrecy, you shall show it to myself only, and assure yourself I will not fail to keep taciturnity therein, and, therefore, herewith I charge you." The historians tell us of his sagacity, and of his close allegiance to the throne of his sovereign, and it may be inferred that the kingdom lost a valuable aid when he passed away. One might enlarge considerably on Hatfield as it was prior to the year 1600; but there is so much of interest to be said of the present house, and its environs, that the closure must be called, or space will not be available for all that ought to be written. It is since that time that the horticultural and arboricultural features have arisen, and to those it is essential that close attention be given.

The immense pile which stands at the present moment is practically as it was erected by Sir Robert Cecil, afterwards first Earl of Salisbury, and second son of the Lord Burleigh of whom mention has been made. It was early in the reign of James I. that this monarch exchanged Hatfield for Theobald's with Sir Robert Cecil, and with this event the connection between the Cecils and Hatfield which continues until now commenced. This nobleman appears to have inherited much of his illustrious father's intellectual gifts, and he it was who completed, in the year 1611, the present mansion. No visitor could fail to be impressed by the monumental size of the structure, which is in some portions so plain and others so ornately beautiful in its style of architecture. With the exception of a portion of the western wing, which was destroyed by fire in 1835, the house stands now as it stood in 1611. It was at this fire that the Dowager Marchioness of Salisbury perished. Since then the structure has been entirely renovated.

It is, perhaps, needless to say that the house is built largely in the Elizabethan style of architecture of red brick, with white stone facings, and is, on the north side especially, severely plain. The south, or principal front of the mansion, is a magnificent example of the Palladian style, and is of great picturesqueness and beauty. The east and west sides are handsome, the former particularly so, as may be seen in the illustration on page 216. We find the following written of the mansion: "The shape of the house is that of a half H, comprising a centre and two wings, the hollow part being turned towards the south. The basement storey contains an arcade with eight arches, divided externally by pilasters. The wings are massive and comparatively plain, supported at each corner by square turrets, 70 feet high to the gilded vanes, the space between comprising three storeys, being relieved by a fine oriel window. The centre tower over the grand entrance, also 70 feet high, is surmounted by a clock." On three sides there are flower gardens, the north side having a large enclosed space, leading from the great avenue to the entrance, but of these features more will be said in succeeding paragraphs.

It was about this period (1611) that the glories of Hatfield, from an arboricultural and a horticultural point of view, obtained ascendancy, and the fact is particularly noteworthy that the first gardener was the famous John Tradescant, or Tradescant. Though in subsequent references this

last established rendering of the name will be adopted, it may be noted that the will of the son of the famous old gardener, who died in 1638, is signed John Tradescant; the period, however, was not remarkable for precision in spelling. Vast indeed must have been the work done by the elder Tradescant, and many tokens of his skill remain at the present day. The magnificent avenue, leading from the north entrance through the park to the Hertford Road, is a lasting memorial to his name. It is gratifying to be able to say that many of the trees, which are mostly Elms and Limes, are superb specimens, and show little effects of the rough buffetings they must have undergone. About three-quarters of a mile from the mansion two other avenues branch right and left. The former of these leads to the old vineyard, not very far from which and adjoining the avenue is Elizabeth's Oak. Near here, too, is an Oak that was planted by our present Sovereign and the late Prince Consort on the occasion of a visit made to Hatfield in 1844. It is a thriving tree; but beside the shells of patriarchal age, and the complete and healthy trees of a thousand winters, it looks a child. A few centuries hence, when perhaps all vestige of Elizabeth's Oak will have gone, that of Victoria will by bearing the brunt of the storm, and the people of the future will weave around and about some charming story of our much-loved Queen. Standing some 20 feet back from the old avenue is a younger one of similar trees, but the object of planting cannot readily be grasped. It was observed that round the bole of each of the later trees a layer of stones had been spread, presumably to keep the roots cool in dry hot weather.

The central entrance to the vineyard was once the house of the gardener—indeed, so recently as during the last thirty years it was occupied. Bearing this fact in mind it is but reasonable to conclude that Tradescant lived here. The vineyard was formed by this famous man about the year 1611 on the northern side of the River Lee, towards which the ground has a natural slope. The number of Vines procured at the outset was 30,000, which were sent over from France, together with two experienced Frenchmen to act as growers. The whole of the vineyard is enclosed by walls, except of course where it is bisected by the River Lee, which was, probably about the same period, considerably widened. It is spanned by two bridges, but neither is within the walls, so that those who wish to cross in the prescribed area must make use of the punt. It was not definitely ascertained how long the vineyard as such was maintained, but probability points to the supposition that it was only for one generation. One can readily imagine that the site was a capital one for the purpose, with its southern aspect and protection from the north and west winds. But after the removal of the Vines the ground, which is of fine quality, was utilised for growing fruits and vegetables for the supply of the mansion. To this purpose the land was put until about twenty-five years ago, when the new vegetable garden now in use was formed. Even now many old fruit trees remain in the open and on the walls as reminders of the past, but with these Mr. Geo. Norman, the present gardener, has nothing to do.

The labours, however, of John Tradescant did not begin and end with planting the avenue and the vineyard, for many other operations were carried out at the time that can be almost definitely ascribed to him. For example, a large belt of trees was planted to protect the mansion from the force of the south-west winds, which come with such terrific strength. In addition to this, he made several journeys to the Continent, notably to Holland, to purchase fruit and other trees for the gardens in his charge, and to him must be given the credit of the introduction of many varieties of fruits that were grown at Hatfield for the first time in this country. It is more than likely that the tastes of the patrons of horticulture in those days differed from those of to-day, and some of them would not now be deemed ornamental; but it is certain that Tradescant carried out many alterations in the style that was then in vogue. Not only is the name of this man perpetuated in the well-known genus *Tradescantia*, but also by a street in Lambeth, where his garden was situated. This was named Tradescant Street, and remains to the present day. Throughout his life he appears to have been closely interested in the study of all phases of horticulture, and his knowledge of earthworks was of service to his country on at least one occasion. From the *Cottage Gardener*, of September 4th, 1860, we glean that Tradescant accompanied the ill-fated Duke of Buckingham, then his employer, in the expedition against the Isle of Rhé. In a dispatch from the scene of operations, dated October 16th, 1627, it is stated: "The winter comes on apace; the men endure much wet in the trenches, and John Tradescant is one of our best engineers; pity our misery."

Then, too, the subject of these particular paragraphs was the founder of the Tradescant Museum, of which frequent mention is made by ancient writers. Of course the contents of this have now become largely distributed, but the residue is preserved in the Ashmolean Museum at Oxford. His collection was said to be of a most interesting character, and denoted a vast amount of energy, skill and knowledge in its compilation. It appears, too, that John Tradescant the younger, whose knowledge of kindred subjects was little less profound than that of his father, continued to add to the museum all kinds of things that would tend to increase its value and interest. John Tradescant the elder, of whom we give herewith a portrait, was, so far as can be ascertained, born in Wiltshire, but the date of his birth has not been traced. Certain it is that he migrated to Meopham in Kent, for in the parish register of that place is found the record of the birth of his son in the year 1608. From here it is probable he was appointed gardener to Sir Robert Cecil at Hatfield, whence he took service with Edward Lord Wotton at Canterbury, whose mansion formed a portion of the ancient convent of St. Augustine.

It was from the garden at Canterbury that Tradescant sent plants to Parkinson, amongst which was the *Tradescantia* of which we have previously made mention. From the service of Lord Wotton Tradescant passed to that of George Villiers Duke of Buckingham, at Newhall in Essex, and after the assassination of this nobleman in 1628 he was appointed gardener to Henrietta Maria, the Queen of Charles I. It was upon receiving this position that he removed to South Lambeth, whence he could have easy access to the Palace gardens. It was here that the museum previously adverted to was formed, and to which he was constantly making additions until his death in 1638. It is recorded that shortly before his demise the University of Oxford purposed to appoint him superintendent of their Physick Garden, which had been established by Henry Danvers, Earl of Danby, in 1632.

Returning now to the vineyard, it may be mentioned that the slopes or terraces on the southern side of the river are fully occupied by various trees;

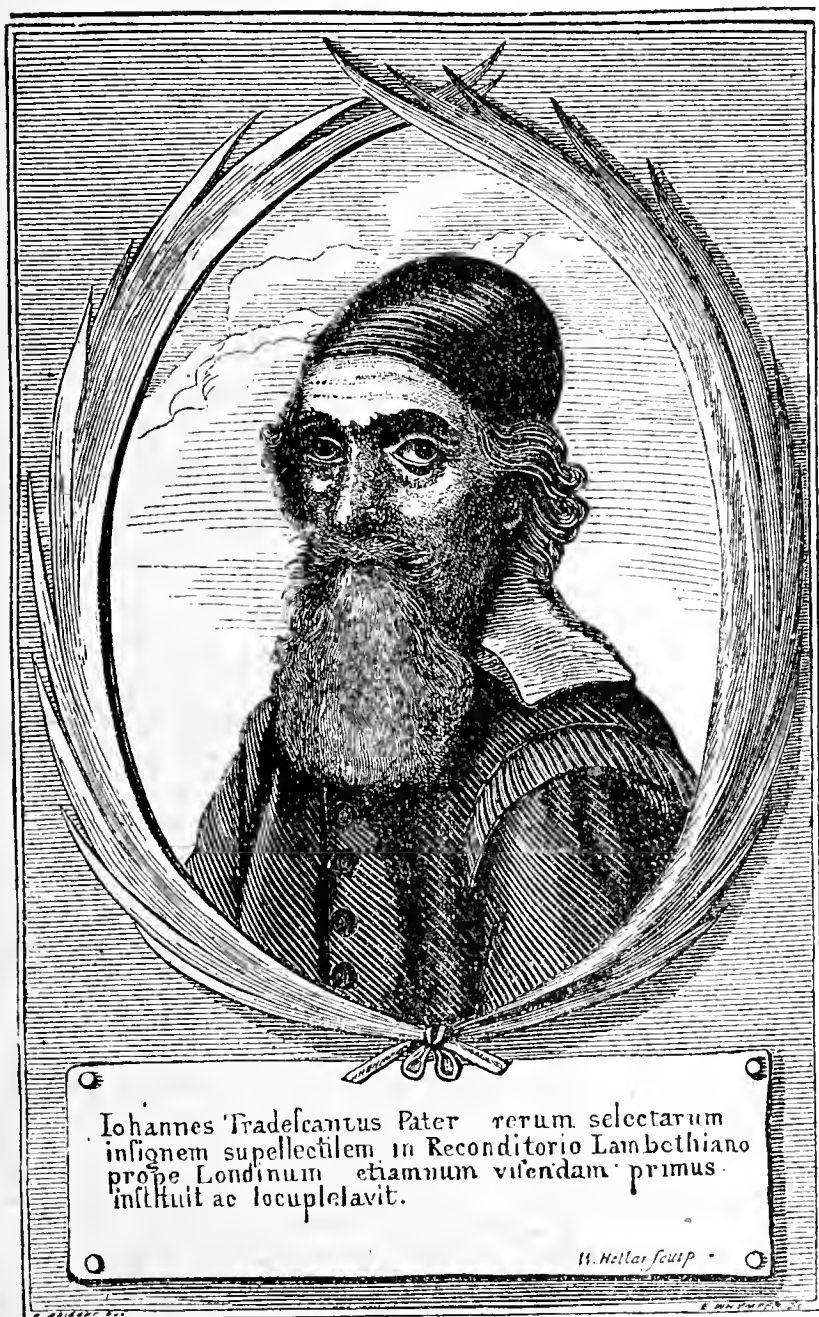


FIG. 35.—JOHN TRADESCANT.

but these were not planted until a somewhat later date. The formal style known as that of Louis XIV. was adopted in planting. In this Yews are largely comprised, which were clipped and trained to form narrow, secluded avenues radiating from one common centre at the top of the bank to other centres on the right and left hand respectively. Here, too, in all probability was the noted topiary work of which much has been written; but beyond the arcades of Yews, which scarcely come within that category, none apparently now remains. Besides the Yews there are trees of various kinds on this south side of the vineyard, which is now maintained as a pleasure garden. The walks are trim and neat, and the grass is kept closely mown, an operation that must be fairly laborious if one may judge by the steepness of the banks. On the top is a broad terrace promenade, flanked on the one side by dwarf Laurels and *Thuopsis*, backed by the wall, and on the other by the slopes, river, and erstwhile vineyard and vegetable garden.

From the vineyard we traverse a portion of the park, passing the two Royal Oaks on our way. The area of the park in which Oaks abound in very large numbers is about 1000 acres, and many and varied are the views therein. Bracken is in abundance, and deer wander at will about

the broad and undulating surface of the ground. The many Oaks, some of which stand singly and others in clumps of several, are probably relics of an Oak forest that covered the area in much earlier days. Some of them are almost perfect, but several are no more than shells. Though Spruce, Limes, Elms, and other trees find a congenial home in various portions of the park, the Oaks stand pre-eminent as the most imposing features. Where the park is covered with undergrowth and trees broad grass alleys have been formed, which make cool, quiet, and pleasant walks during the hot days of summer. Of these there are presumably several miles, as they stretch away from the avenue leading to the vineyard at frequent intervals and in all directions. It was in this grand park that George III. held a review of the Cavalry, Yeomanry, and other troops in the year 1801, a spectacle that one can easily imagine must have been a glorious one. No place could have been better for such a purpose, the character of the ground and the size rendering it peculiarly suitable. A distance of upwards of half a mile across the parks brings us within the charge of our conductor, Mr. Norman.

Our course has been down the gentle slope of a hill, at the foot of which is a broad and beautiful valley, and a portion of this was until about twenty years ago, an almost impenetrable wilderness garden, with a large area of water in the centre. Now things have been changed, and this pleasure garden in skilful hands has become a charming feature of the place, marred to an extent, no doubt, by the fact that the lake will not now hold water. The undulating banks have been planted with scores of flowering trees and shrubs, as well as forest trees and Conifers, all of which are thriving and growing apace. This portion of the estate must be singularly interesting and beautiful towards the end of April and in May, when the thousands of Rhododendrons will be sheets of beautiful flowers. At the eastern extremity, what was formerly a more than ordinarily neglected corner has been converted into a beautiful retreat by the aid of huge mounds of earth, old tree stumps, Ivy and hardy Ferns. The Ivy rambling over stones, stumps, and banks is gaining the upper hand, but here and there in places where it has been checked the Ferns are growing well. Judging from the age of some of the trees, Mr. Norman supposes that this garden must originally have been formed in the time of Tradescant, or, if not then, very shortly afterwards.

Before quite concluding the references to Hatfield in the past, and coming to the Hatfield of to-day, we should like to quote a paragraph from "A History of English Gardening," a work compiled by Mr. George W. Johnson, and published in 1829, that relates to Hatfield Gardens. It says, "In the reign of Elizabeth arose Hatfield House, in Hertfordshire, the seat of Lord Treasurer Burleigh. Hentzner describes the gardens 'as surrounded by a piece of water, with boats rowing through alleys of well-cut trees and labyrinths made with great labour. There are *jets d'eau* and a summer house, with many pleasant and fair fish ponds and abundant statues,' which he enumerates. There were two parks at Hatfield House, one respectively for red and for fallow deer, also a vineyard that was in existence when Charles the First was detained prisoner there." There is some conflict between the opening sentence of this quotation and the records given in earlier paragraphs, as from these it was gathered that Sir Robert Cecil was the first of this family who owned Hatfield, and this is probably correct.

The gardens of Hatfield as they are at the present day comprise features that are modern as well as portions which have existed since the days of James I., with one or two others whose age will be about a century. As a matter of fact there is a series of gardens on the east, west, and south sides, but not to the north, a representation of which frontage is given in fig. 43, page 217. This is certainly the least interesting side of the structure from a horticultural point of view, for save the little Ivy that can be seen there is nothing to attract the attention. But pass through the handsome iron gates surmounted by the coronet and monogram of the Cecils, and much will be found to examine and to admire. Coming from the pleasure garden already noted there is an easy ascent to the east front of the house; but before it is actually reached we pass the maze of Yews surrounded by a splendid hedge of a similar nature. This Mr. Norman estimates has been formed within this century, and it is the oldest horticultural portion hereabouts. On a rather higher terrace is a broad border now in course of renovation, and which is backed by a wall on which are Roses and many charming flowering shrubs that make a background for the terrace.

Mounting still higher, we soon gain admittance to the eastern garden, with its many beds and palisaded walls clothed with Monthly Roses. Just now, it is needless to say, the beds cannot be gay, but ere long the yellow and red Wallflowers will be in flower, and will diffuse a fragrance that is appreciated by all. Several beds are devoted to these, with others of varied spring-blooming plants, that later will have to give place to the flowers of summer. Though the design of this garden is formal, one can easily imagine that it will be very beautiful during the flowering period of the several plants, and while the Monthly Roses are producing their clusters of lovely blossoms. A broad flight of stone steps leads up to a gravel terrace and the entrance to the mansion, and it is this aspect that is depicted in the illustration (fig. 42) on page 216. This is a picture of historic interest, for it was taken on the occasion of the visit of the Emperor and Empress of Germany to Hatfield in 1891. Examine the illustration closely, and the Empress, with the Marchioness of Salisbury,

will be seen passing down the centre of the terrace, while beyond the Emperor may be observed talking with the chief of the German Legation. His Imperial Majesty may be distinguished from the fact that he is the only person represented who has had recourse to the homely "bowler" hat. Descending the steps from the mansion is the Marquis of Salisbury, who is entertaining the Royal visitors and others at a garden party. This illustration may well be examined a second time, for on the right can be seen the famous avenue of which we have spoken as having been planted by Tradescant the Elder. Thus the photograph is historical in more respects than one.

Not that these are the only Royalties who have honoured Hatfield. On the contrary, all who have visited England seem to have made a point of going there. Her Majesty has been twice; once, as noted, with the Prince Consort in 1844, and again during the Jubilee year (1887) of her reign. The Prince and Princess of Wales have frequently honoured

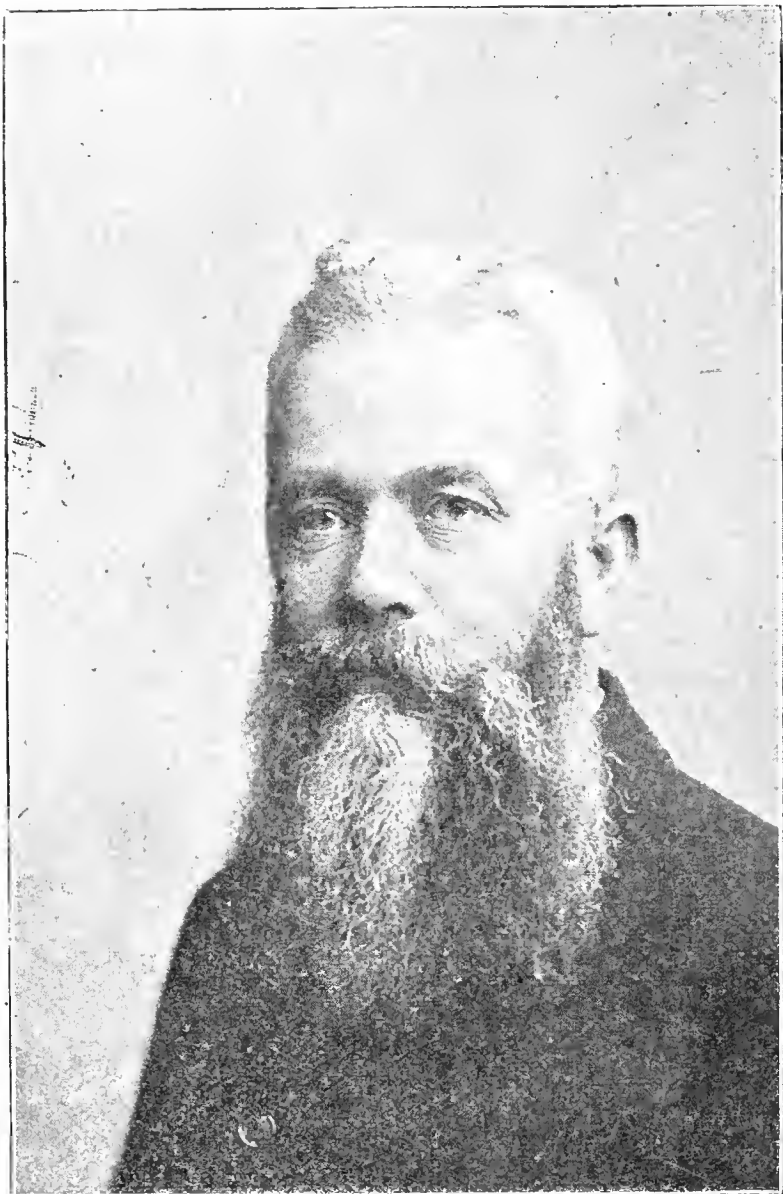


Photo by

Elsuen & Son, Hertford

FIG. 36.—MR. GEO. NORMAN.

Hatfield by their presence, as have other members of our Royal family. Then, too, the Shah of Persia was a guest, as were the Prince of Naples, and last, but not least, Li Hung Chang so recently as 1896. It was then that a daily contemporary said, "Li Hung Chang may well describe his visit to his fellow countrymen on his return in the words of an old author as to Sir Robert Cecil's entertainment of King James I. and King Christian of Denmark in 1606, for Hatfield traditions of hospitality know no change." The passage referred to runs:—"Upon this occasion there wanted no means either of device, pleasure, entertainment, feasting, or what else might glut the heart with contentment but was there with the most liberal hand and willing heart and contented spirit poured forth. No man was reprehended for giving, but many for not taking."

Before the principal entrance on the south front of the mansion is a somewhat extensive flower garden laid out in geometrical design, and in which the beds have all stone edgings. Many of these are of considerable size, and for the winter are occupied by small evergreens with bulbs between for a spring display, to be followed later by thousands of summer flowering plants; but these will not take their places yet for some time to come. There is, too, in this, as well as in each of the other gardens, a considerable proportion of grass, all of which is kept neatly mown throughout the summer months. Extending from the southern entrance for a considerable distance is a grass drive, flanked by rows of trees which have a magnificent effect during the spring, summer, and autumn

months. From the main door this gives a grand view to the woods beyond. On this side of the house Roses, Magnolias, and other climbers ramble, one specimen of *Magnolia conspicua* being superb. Its branches extend to a great height, and are roped with thousands of buds and a few already expanded flowers.

On the western side of the house there are several of these enclosed gardens, comprising mainly herbaceous plants, though Roses have a division to themselves. Two of these gardens are noteworthy—one from the style of planting, and the other from the time of formation. The first is a creation of Mr. Norman's, and is laid out in beds full of herbaceous perennials. In the centre is a large basin and fountain, to the edge of which the grass reaches. The sections of the garden all converge towards this central fountain, and each bed in every section is planted with one colour only. Thus there are blue, red, white, yellow, pink, rose, and purple beds, planted so as to form contrasts, and producing an effect that is quite unique. The second garden is of much earlier date, for it was formed during the time of King James I. Round the outside of it—the centre is grass, and beds, as in the cases named—runs an arcade that has been formed of Limes, while at each corner is a Mulberry tree that was planted at the same time. It is probable that the making of this garden was contemporaneous with the planting of the great avenue, and would therefore be done by Tradescant. The canopy of green makes a cool walk during the hottest summer day.

Running parallel with the western terrace is a broad asphalt promenade divided from the fields by a splendid Holly hedge. This is about 5 feet in height, and several feet in thickness, and throughout the whole length of upwards of 100 yards not a single weak place could be found. To the right as one stands on this terrace facing the town of Hatfield is the church, which was restored by the Marquis about twenty-five years ago. It is a noble edifice which, standing high, can easily be seen from the railway that runs at the foot of the hill. The old palace, tennis court, and gate house, to which attention has already been called, are also very close to the church and promenade, while to the left are the kitchen and fruit gardens, together with the hothouses, and to these we will now wend our way. Many are the splendid trees beneath which we have to pass in variety that is well nigh endless, and of a beauty that we shall not attempt to describe. From the old and interesting we turn, reluctantly perhaps, to the new, interesting, but none the less, utilitarian department.

The mention of the church reminds of another jotting of Pepys in his famous diary, August 11th, 1667:—"And so to Hatfield, to the inn, near my Lord Salisbury's house, and there rested ourselves, and drank, and bespoke dinner; and so to church. In this church lies the former Lord of Salisbury (Cecil), buried in a noble tomb. Then we to our inn, and there dined very well, and mighty merry; and walked out into the park through the fine walk of trees, and to the vineyard, and there shewed them that which is in good order, and indeed a place of great delight; which, together with our fine walk through the park, was of as much pleasure as could be desired in the world for country pleasure and good ayre. Being come back, and weary with the walk, the women had pleasure in putting on some straw hats, which are much worn in this country, and did become them mightily, but especially my wife."

It is only natural where such a large establishment as the one of Hatfield is maintained that the supplies of vegetables, fruits, and flowers of all kinds are enormous. For example, the kitchen garden department has already sent to the mansion since the new year 15,000 heads of Asparagus, and all other kinds are in proportionate demand. The new vegetable and fruit garden was formed just prior to the time of giving up the one in the vineyard, and comprises about 7 acres within the walls and some 4 or 5 acres round the outside. Thus there is not too much room for the quantities of fruit and vegetables that are required, and the closest system of cropping has perforce to be adopted. The soil does not look at all "kind," but we were assured by Mr. Norman that with good working and plenty of manure all kinds of vegetables could be produced of excellent quality. There are immense quarters devoted to Asparagus and Celery, while Peas in about half a mile of rows are well above ground. All the green vegetables with the valuable root crops are largely cultivated, as are the various saladings. Tomatoes and Cucumbers in the houses look remarkably well, and the latter have just reached the fruiting stage. The Asparagus roots are lifted successively, and are forced in the beds of a couple of houses. Young Carrots in the frames are looking well, and the sweet, tender roots will be very acceptable. The walls that surround the kitchen garden are all built of concrete, and are not therefore likely to perish. Of course, it being impossible to drive nails into the walls, they have all had to be wired, and there is now growing on them as fine a collection of fruit trees as anyone could wish to see. They are clean and healthy, having no signs of insect pests, and we can readily accept our guide's assurance that they produce grand crops of fruit. Mr. Norman is very emphatic in his praises of the wired walls, considering them in all respects preferable to those that necessitate the use of nails and shreds. Besides these trained trees there are others on the stables and the tennis court, while in the open there are large numbers of Apples and Pears, as well as Plums, Damsons, bush fruits, and Strawberries. All look well, and show evidence of skilful attention to their requirements.

Under glass fruit is as carefully tended as that which is grown out of doors, and the results attained are equally as gratifying and satisfactory to everyone concerned. In all there are seven vineries containing the customary varieties, and it is the boast of the grower that for sixteen years he has never been without Grapes for a single day. His pride on this point is quite pardonable, for it is an achievement deserving of all praise. At the time this visit was made there were in the Grape room just over 100 bunches. The roots of all the Vines are both inside and outside of the houses, and the borders inside have to be utilised for bedding plants during the resting period. Every two or three years the borders are extended a little by the addition of squares of excellent loam. Of the remaining fruits under glass the most notable is a Royal George Peach, which was planted by the present gardener just twenty years ago. For sixteen years an average of 300 fruits per annum have

been gathered from this tree, and in some seasons there have been as many as 400 good specimens. In round numbers this gives 5000 fruits from one tree, at which even the most hypercritical would scarcely grumble. The tree is not yet exhausted; in fact, it is in the best of health, and has now an enormous number of fruits set for the coming season. The wood is clean, straight, and not very large, while the flowers are perfectly developed. It occupies one side of a low span-roofed house that is about 50 feet long.

The number of houses devoted to plants is very considerable, and these are augmented by long rows of frames and hotbeds, where Violets, Carnations, Chrysanthemums, and Cyclamens are accommodated. All the plants grown are chosen with a view either to supplying cut flowers or for the purposes of house decoration, and for the latter purpose everyone knows exactly what would be selected, so none need be named. Of flowering plants those are mainly chosen that produce fragrant flowers, such as Lily of the Valley (now being in great demand), Hyacinths, Carnations, and the many others that will occur to the minds of readers, and call for no special mention. Roses have a bed in one of the span-roofed houses devoted to them; in this the plants are pegged down, and during the year many thousands of flowers are cut therefrom. All the varieties are such as produce blooms suitable for button-hole bouquets. The cleanliness of every plant in all the many houses is worthy of remark, for no vestige of enemies of any kind could be discerned. To a large extent this, without doubt, accounts for the fine condition of the plants. The woodwork, walls, and glass are also, and wisely, kept as clean as possible. The conservatory, referred to as being within sight of the trains, is a long, comparatively narrow, corridor-like structure, with a central bay. This is now very bright with Camellias, of which the large shapely plants are producing thousands of variously coloured flowers amidst the glistening

green leaves. They are very handsome, and remind of the Waltham Cross collection of Mr. William Paul, whence perhaps they came. Between the Camellias, which are planted out, are some of the finer-growing Bamboos, and these enhance the general effect.

The task is almost done. Hatfield has been spoken of as it was 300 years ago, and as it is to-day. Much more could be said without doing adequate justice to this grand estate. However, the future holds many possibilities, amongst which may come the opportunity of a second visit to Hatfield. Let us hope it will, for it is certain that, considering the interest in horticulture and allied subjects possessed by both the Marquis and Marchioness of Salisbury, there will be no deterioration in such interest and no diminution in the beauty of its many and varied features. We have pleasure in giving the portrait of Hatfield's past-master gardener of 1611—Tradescant, and also that of his successor, after nearly three centuries—Mr. George Norman, who for twenty-two years has been entrusted with the management of these gardens, and who throughout that time has proved himself fully equal to his great and responsible charge.—H. J. WRIGHT.



FIG. 37.—ESCAPING VINE ROOT.

INSIDE AND OUTSIDE VINE BORDERS.

SOME very sensible remarks have recently appeared in the Journal from Mr. Temple and others on the always interesting subject of Vines and Vine borders. Perhaps a few more remarks may not be unacceptable to some of your readers. In many cases Grape growers have to trim their methods to suit peculiar conditions that are not, as a rule, taken into account in ordinary treatises on Grape culture, hence the desultory remarks of cultivators are calculated to serve some useful purpose.

As to the comparative advantages of having the roots of early forced Vines entirely restricted to an inside border over that of their having also the run of an outside border, it may be said that it is a question on which it may be well not to dogmatise, as so much depends on other conditions that may be peculiar to individual cases. There can be no question as to the desirability of having the roots of Vines that have to be forced to ripen Grapes in April and May well established in a good inside border, and if it is intended ultimately to let them into an outside medium they should be compelled to first take good possession of the inside border.

For my own part I have a bias—if it may be so termed—in favour of the double run. It is easy to have Vines well established inside before letting them work outside. This can be done by building up the openings in the front wall, and when these are opened to let the roots out it is well not to remove more of the brickwork than the two top courses, so that the roots go out near the surface of the border. Vine roots, if left to themselves, seem to have a predilection in favour of an outside border and of proceeding in the opposite direction to the rods, and soon find their way outside. Indeed, ordinary brick and mortar work is not a sufficient barrier to their doing so. Nothing short of cement joints can baffle their efforts to get access to an outside border. This natural course is worthy of being noted, and may be considered as pointing in favour of an outside as well as an inside border, no matter what may be the date when ripe Grapes are required.

The Editor has sent me two very interesting illustrations, that may be regarded as proofs of the foregoing remarks as to the strong bias Vine roots have for outside borders. They are certainly very striking examples of the determination and power that Vines exert in carrying out this bias. As the illustrations demonstrate, they have forced their way through a 9-inch wall, and flattened themselves abnormally in the process. Mr. W. Taylor, gardener to C. Bayer, Esq., Tewkesbury Lodge, Forest Hill, who won the silver medal of the R.H.S. last year, has charge of the Vines in question. He also was the winner of a special medal at Beckenham. The illustrations are just half the size of the persistent roots.

Of course if the outside border is to be of the greatest possible service to the Vines and crop, it should be managed on certain lines. The well-known fact that the temperature of the soil in early autumn is warmer than that of the atmosphere ought to be sufficient reason to lead the cultivator, who elects to have the assistance of an outside border, to take the best means to conserve its heat, and not allow this natural warmth to be, so to speak, stolen away by the chilling blasts and rains of autumn, before taking timely measures to retain it. A good way of effecting this is to cover the border early in autumn with some loose non-conducting material, such as dry leaves, hay, or straw, and the whole with a thick thatch of well-drawn straw, to throw off all rain and searching winds.

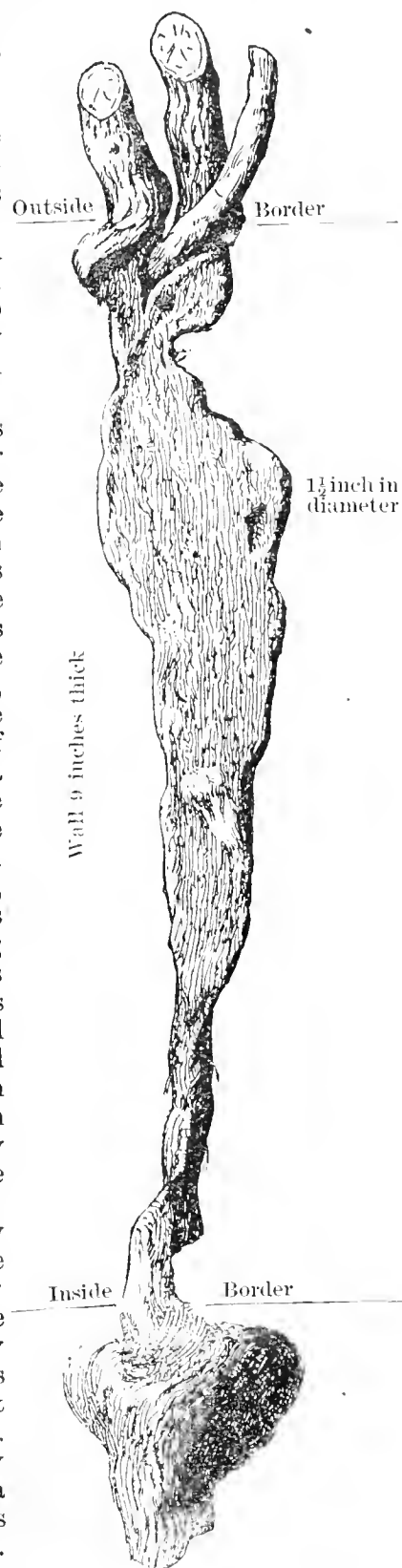


FIG. 38.—ESCAPING VINE ROOT.

I have had a striking experience of the extent to which heat can be husbanded, in the case of a Vine border from which I was in the habit of ripening Grapes by the last week in April, and where circumstances did not allow of any inside border. I uncovered part of the border at its middle in February, and plunged a thermometer in it to the depth of 16 inches, and found that in a very short time it raised the mercury from 40° to 60°. This border was well raised above the

September, and which, of course, did not require much fire heat. One limb of the Vine ripened its crop in the early division in April; the other limb in the late division did not ripen, as I have noted, till September. In the early house the bunches were compact and moderate sized, and there never was a shanked berry in them; in the cool house the branch of the same Vine produced much larger but looser bunches, in which there was always more or less shanking.

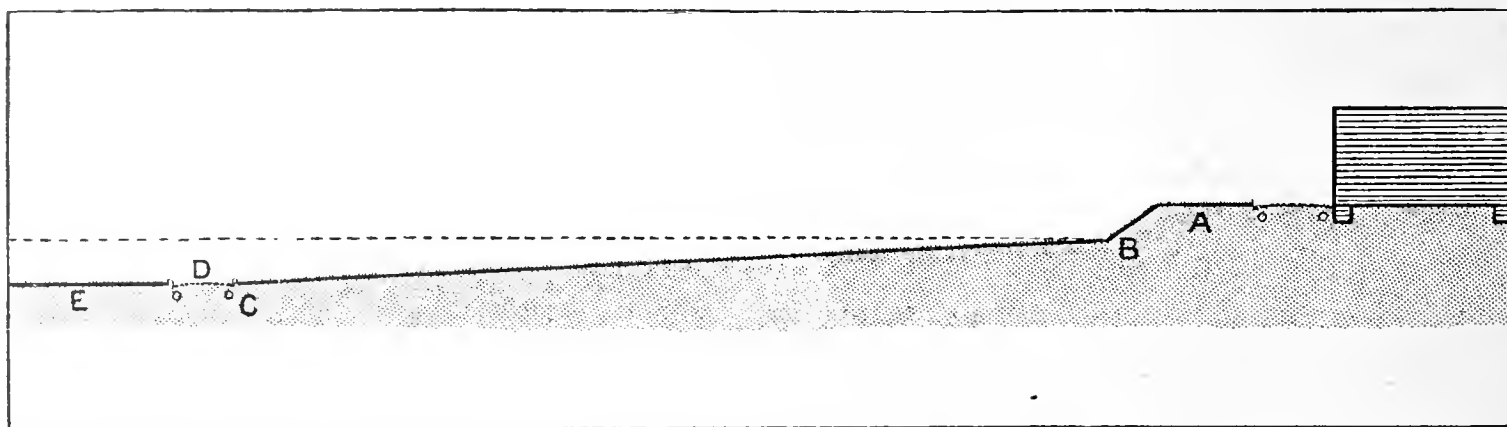


FIG. 39.—LAWN SECTION—A, LEVEL TERRACE; B, SLOPE; C, END OF FALL; D, WALK; E AND DOTTED LINE, LEVEL

ordinary ground level, had a more than usual slope to the front, and was always covered, as indicated above, early in autumn.

The late Mr. Thrower, who for so many years grew very superior early Grapes at High Canons in Herts, to my knowledge ripened nineteen crops in succession of Black Hamburgh Grapes from the same Vine in ainery where there was no inside border, and where the outside one was covered as I have described. In spite of all this I would much prefer to have an inside border, while at the same time I would not like to be without one outside also, even in the earliest of forcing. Admitting that the roots in an inside border are so circumstanced that they respond more readily and effectually to their task than those in an outside border, yet the latter respond with their aid at a time when it is most required. I question, however, if the outside border be properly managed, if they are far, if anything, behind those inside in starting to their work. It is a nice point that I have never proved.

As a rule there is not so much call for very early forcing now as there was before long-keeping Grapes came on the scene. It is now a

The cause of this difference of the size and shape of bunches arose from the different degrees of ripeness to which the two branches attained.

Shanking is no doubt the result of different causes. Still, I cannot help thinking that the build or shape of bunch has something to do with it. This is what may be termed to some extent a vexed question. I have, however, noticed that, on Vines in the best condition and not given to shanking generally, when a loosely built bunch has been left, that bunch, and that only, on a given Vine has shanked. If this be one of the things that cause shanking, the remedy of ripening the Vines so as to produce compact bunches points to the cure of this predisposing cause.

Before closing these desultory remarks, it may be of service to some of your readers to call attention to the practice of some growers in mulching Vine borders when fire heat is not applied to the houses till, say, the 1st of March. I have seen the borders of such Vines covered with a considerable depth of cow manure in December and January. Surely a little thought should be sufficient to guide to the conclusion

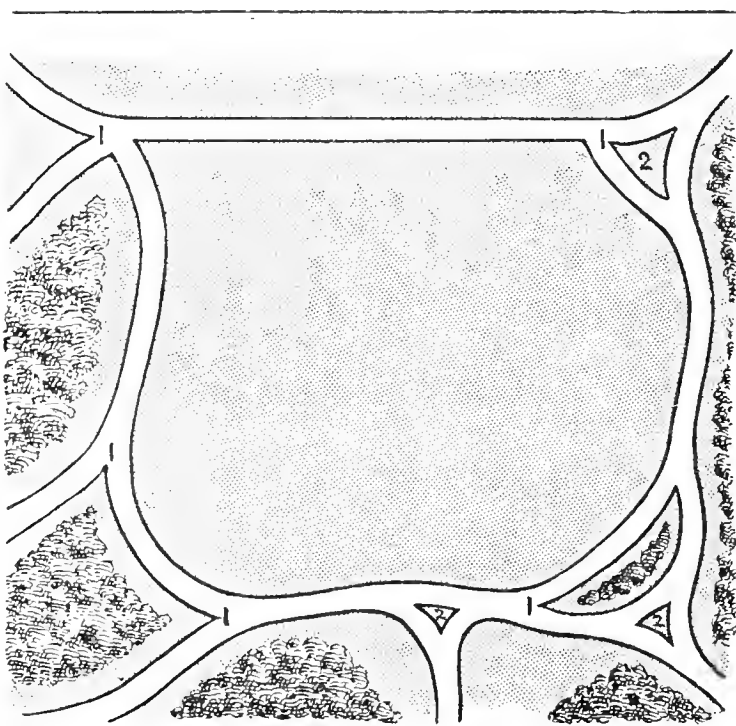


FIG. 40.—LAWNS - POINTS (1) AND PINCUSHIONS (2)—BAD.

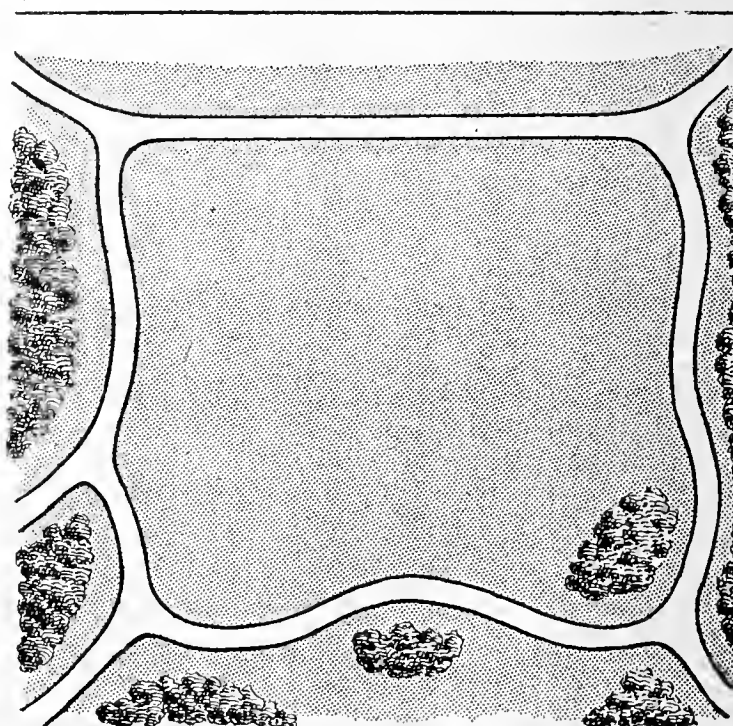


FIG. 41.—LAWNS COMMON SENSE CURVES—THE BETTER WAY.

comparatively easy and common thing to have good old Grapes till June; still no Grape suitable for early forcing or for late keeping can compete with Black Hamburgs for quality, and it is not a difficult matter to have them fit for table in May. The pity is that other comparatively coarse sorts have ousted them so much out of their place in autumn and early winter.

I should like to refer to a rather interesting experience I had in connection with early forcing in the case of the outside border that I have described. One of the Vines was planted near the division which separated the early from a house where the crop was not ripened till

that this is not good practice. Such a mulching at such a time is, to a great extent, wasted, and is a poor non-conductor of heat. It is much better to cover with some loose litter or straw at the time named, and when the sunshine of March to June is acting beneficially, to draw off the straw by day and replace it in the afternoon to conserve the heat. When the Grapes are thinned and the roots active is the time to apply rich mulching and top-dressings, which nourish and conserve moisture, and thus attract the active roots to the surface. Coverings and uncoverings of straw in spring have a wonderful effect in warming the soil. By such practice, the great growers for London and other

markets produce Radishes early enough to realise £40 an acre, instead of £15 without the use of straw.

Mulching outside and inside borders with close mortar-like manure when carried to excess, especially on inside borders, results in bringing the soil into a condition that is not conducive to the health of Vines. Inside there is a comparatively stagnant air, and the borders often receive less pure water than is desirable. Outside there is exposure to all the winds that blow, and to all the autumn and winter rainfalls. These rich mulchings, and more especially when accompanied with liberal applications of liquid manure, have a tendency to what in common phraseology is termed souring the soil; in other words deleterious acids accumulate in it to an injurious extent. The rains help greatly to get rid of these in outside borders and keep the ground "sweet" and healthy. May not this have something to do with the instinct-like tendency of Vine roots to escape into the open air border?

When I left the driest district in Great Britain to practise in one of the very wettest, in which I have seen January and December give 25 inches of rain, I adopted measures to throw the winter rains entirely off some of the Vine borders. Not a long time was required for showing that those covered were not in nearly so satisfactory a state as those exposed to all the rains that fell. Years after the time I have referred to, the late Mr. Honeyman, whom I had much satisfaction in enlisting as a horticultural writer, treated in the "Gardener" and the *Journal of Horticulture* on the subject of injurious accumulations in highly enriched soil being washed away to a large extent by heavy rains. D. THOMSON.

LAWNS AND ALLIED SUBJECTS.

(Continued from page 184.)

IN a study of the position which may cover some considerable extent of ground, appearances at first sight may be very deceptive in the matter of levels, and if the work is commenced without including the whole area in the calculation, it may commence very well indeed, but end very badly, involving a serious expenditure of preventible labour. Among many examples, some of which have come under my hands, and more under observation, I have never dealt with or seen parallel cases of treatment, hence a special study of each, including the house, the grounds, and the desire of the owners, which, indeed, may be general enough to allow of good taste and sound judgment meeting all requirements at a minimum of expense, as all are factors to be taken into account. Outlines, however, sufficiently elastic may be given to suit most cases.

The principal frontage, usually termed the garden front, may chiefly engage our attention, and in most cases this will face to the south, with possibly a point or two either east or west. If architectural forethought in the choice of position has done its duty by the house, as a gardener may hope to do his by the grounds, these will fall from it instead of towards it. A gentle fall to the south or south-west is an ideal position. Supposing the house to stand upon a plateau, part of which forms a terrace, our lawn in proximity to it is probably the only portion it is either necessary or desirable to make truly level, for a dead level lawn is seldom desirable. Longitudinally, however—viz., running east and west, supposing the position to be due south, the true level is essential for a given distance.

An illustration (fig. 39) shows where the grass, A, commences on the terrace, which, being a part and parcel of it, will be perfectly level; B, a slope, is the connecting link with the body of the lawn. A well made slope is not only a point of beauty in general effect, but is often the key to labour-saving in the matter of levelling, according as the fall of the ground demands it. The slope, if at not too sharp an angle, will be such as a skilled labourer will easily mow with a hand machine. Apart from Italian terrace work, this may be again repeated if occasion warrants it, and may, or may not, include the provision of grass steps (which will be treated of in due course). From the slope our level, always correctly preserved longitudinally, will gently fall, according to the requirements of the particular case, as at C, this fall being about 1 in 30, until a supposed boundary walk is reached, D, which finishes what may be termed the lawn proper, although beyond that, at E, more kept grass is present, either at a true level, as shown, or still gently falling away. One instance I know where with this finishing margin the reverse occurs, and it is made to fall to the walk. The effect of this from the windows is not good, tending to a foreshortening.

A phase of bad treatment may now be shown, in order to avoid—viz., cutting up into sharp corners, or elongation into puerile points at the junction of walks. Where walks join at right angles this is less conspicuous, but we are now dealing with the more picturesque freedom, employing curves and graceful outlines, and where caprice more than common sense is not rarely to be seen. Fig. 40 illustrates what is meant relative to the bad system, and fig. 41 the better way. —SYLVA.

(To be continued.)

SEAKALE CULTURE.

THERE can be no question as to the wholesomeness of this excellent vegetable; in fact it has many good qualities to recommend it, the first and foremost being that it is available at a season when other fresh vegetables are oftentimes very scarce. Many vegetables have a tendency (when forced) to taste earthy or insipid, but Seakale I hold to be an exception to this rule; for when grown in any ordinary way out of doors, with full exposure to the atmosphere, it loses that crispness which is its most essential point of merit. Therefore this vegetable is much improved by forcing, always provided that artificial heat is not used to excess.

Slow and careful forcing must be accorded, especially for the first crops. The reason of this is at once obvious, for, like all plants, Seakale requires rest; and as this does not take place until October, and even later than that in some seasons (notably 1897), it is not to be wondered at if the plant resents being urged into activity a week or two after that time. The crowns should have at least one month complete rest, otherwise it will be found that the young shoots will be more like straws than Seakale. After the end of January the crowns will endure more urging. Generally speaking some part of the Mushroom house is available for the purpose, while in some places where this vegetable is extensively grown there are heated pits or boxes to receive the roots, and when these are at command it is a comparatively simple matter to keep up an unbroken supply until late in the spring.

Forcing in the open is resorted to here for the late supply, the crowns being planted in a double row at about 1 foot apart each way, and early in the month of February are covered to a depth of about 15 inches with Mushroom bed refuse in the form of a ridge. The gentle heat imparted by this material appears to suit the Seakale admirably, for the heads of the plants push through, and produce fine, stout, and clean Seakale, which is much appreciated. We usually leave these plants on the same spot for two years, after which they may be removed and replaced with young plants. Some growers prefer to raise annually from seed, but we find the old-fashioned plan of growing from sets answers our purpose better. These are broken off in lengths of about 3 inches, selecting those about the thickness of one's forefinger in the autumn when lifting. They are then stood in rows in sandy soil, where they remain until they commence to break, after which we transfer them to their permanent quarters. We successfully force 3000 crowns annually by the methods laid down.—H. T. M., Stoneleigh.

A FRUIT PEST.

THE Gooseberry saw-fly (*Nematus ribesii*), which levies such exorbitant tithes on one of our most popular fruits, is generally described by naturalists as a pretty and merry little insect which passes its brief life in disporting with its companions in the sunshine. We might to a certain extent concur in this eulogistic estimate were it not the fact that in another stage of its existence it literally plays "old gooseberry" with the fruit from which it takes its name, and it is doubtless from its devastating proceedings in this connection that the expression, as quoted, originated.

From a gardener's point of view, its merriment at any time is sadly out of place, inasmuch as there is not a more destructive little fellow to be met with in the whole list of garden pests, and it certainly requires a perfect stoic to maintain even a cheerful or calm demeanour when viewing its depredations. The eggs are deposited on the backs of the Gooseberry leaves at regular intervals like beadwork. In about a week the grubs issue head foremost, leaving the skins of the eggs standing like a row of empty silver purses, and straightway they fall to eating, and this with such appetite that the effect of their first meal alone changes their smoke-coloured vests into positively a doublet of Lincoln green.

There are some sixty or seventy of these voracious little insects on a leaf, and as each grub will eat three leaves to its own share before being fully fed, it follows that by destroying one infested leaf a couple of hundred are saved. If left alone, however, to pursue its inclination, the grub will go on eating without intermission until developed into a length of half an inch. The black head then separates like a mask from the neck and splits down the middle, a new head shooting up from the opening. The entire body is next wriggled out, and at length, having got rid of the embarrassing skin, the caterpillar sets to work to fill the new one, eating without intermission for several days. At the end of this repast the skin is again cast, and the still larva remains of a pale delicate green colour. Eating days, though, are numbered, and descent is made into the earth to the depth of a few inches, when a little oblong cell is formed, and then, surrounded with a tough black cocoon, the next transformation is awaited, which is into the chrysalid state, and then finally into a fly *de novo*.

When the eggs are laid in the month of May the whole of this natural history down to the appearance of the fly occupies the space of about a month; but at times, when the eggs are deposited late in the year, this intelligent grub does not emerge from its subterranean abode till the following spring. If there be found, as well may be the case, any gardener so inhospitable as to desire to save his Gooseberries at the expense of this so-called interesting and amusing visitor, the best way apparently for him to proceed would be to beat down and harden the soil all around the bushes, so as to convert the intended temporary retirement from the pleasures of the world of this representative old gooseberry into that term known to the law as "his natural life." —WM. NORMAN BROWN.

EMPEROR
WILLIAM II
OF
GERMANY.

MARQUIS
OF
SALISBURY

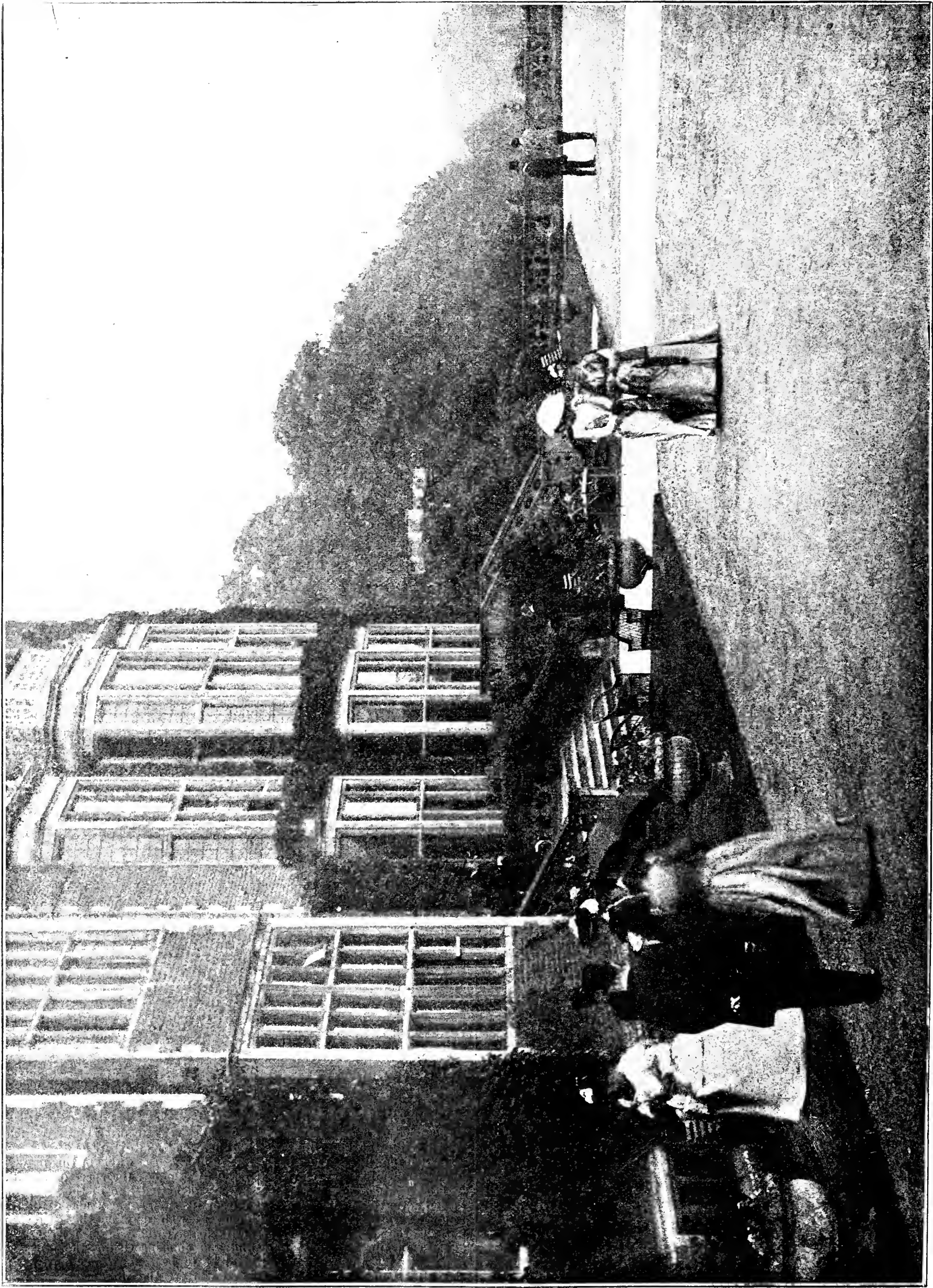


FIG. 42.—GARDEN PARTY GIVEN IN HONOUR OF THE EMPEROR AND EMPRESS OF GERMANY BY THE MARQUIS AND MARCHIONESS OF SALISBURY, JULY 12TH, 1891.

Photo by
Etaden & Son,
Hertford.

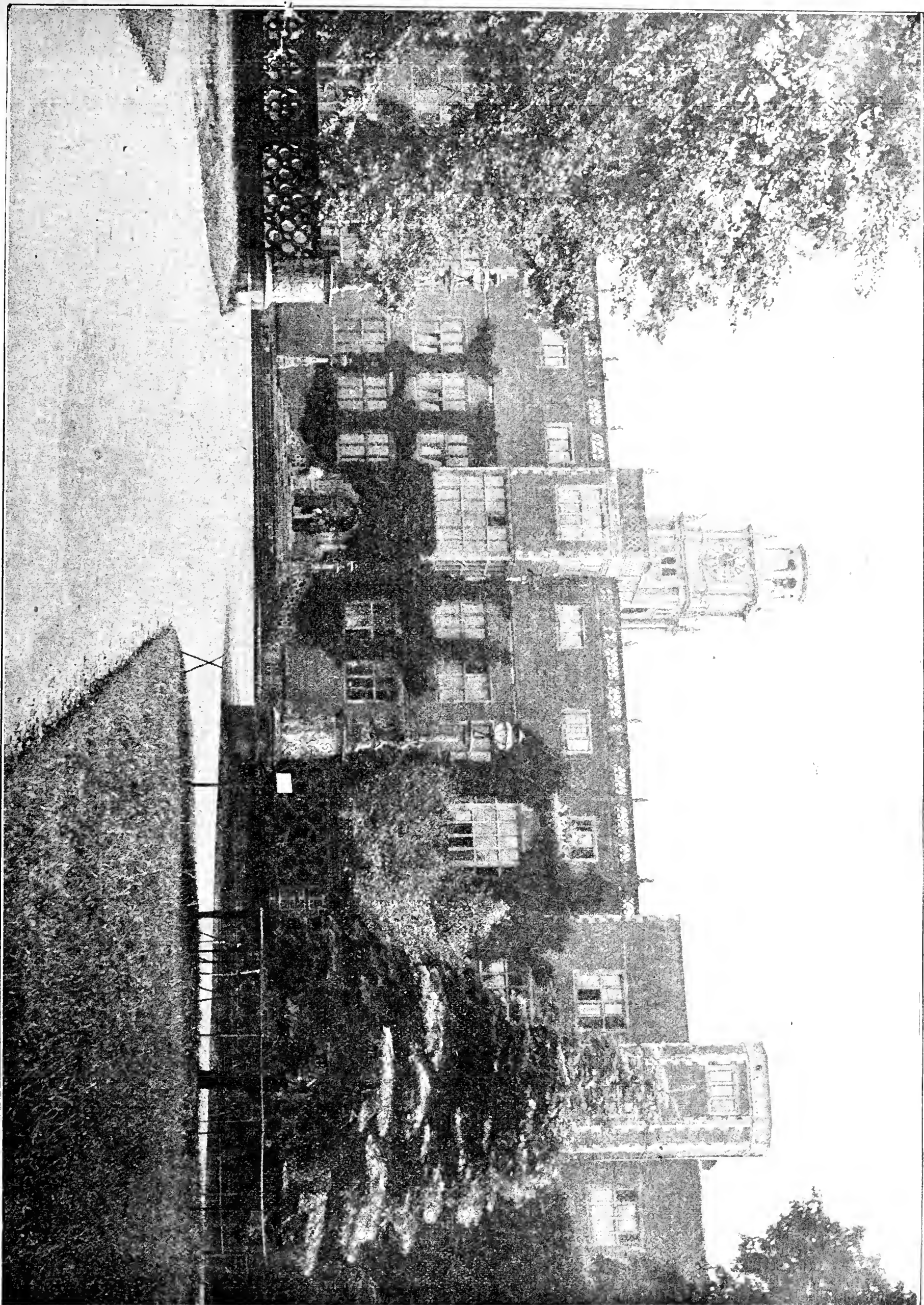


FIG. 43. HATFIELD HOUSE (NORTH SIDE).

Photo by Lord Cooper, Hatfield.

PHILOSOPHY IN GARDENING.

Is there any? What is it? In order to start upon the level ground of reason it is important that no misconception should handicap the effort to run beyond dispute, and it will clear the way considerably to have the simplest definition possible of the term philosophy. Possibly there are as many so-called philosophies as there are varieties of Potatoes, but after all the one is philosophy, the other the Potato till the end of the chapter.

For present purposes our subject may be divided into two phases, the one in direct relation to garden work, the other more or less so to the worker. These harmoniously blended represent, to my mind, the highest potential of power that the worker can wield. Some there are, perhaps, who have little or no faith in things they can neither hear, see, smell, taste, nor feel, and one cannot but admit that it is the commonest of common sense to find in the senses a proof of existence; but it appears to be the vague application of the term which is at fault, resulting chiefly in an intangible quantity that some practical men will have none of so far as gardening is concerned. Others, with more faith and probably less reason, have regarded it as a kind of sterilising substance detrimental to the felicities of life.

In a standard work, "The Imperial Dictionary," philosophy is described as "the hypothesis or system on which natural effects are explained." Gardeners dealing with the best illustrated work of Nature, so far as its flora is concerned, have, I think, every right to be placed in the higher ranks of the great school of philosophy. "The Imperial Dictionary" also informs me that to reason philosophically is to reason "calmly," "wisely," "rationally," and conclusively settles the question of meaning, so far as we are concerned, by further stating "it is to search into the reason of things; to investigate phenomena, and assign rational causes for their existence." To sum up the matter in a few words, philosophic inquiry is the searching for truth, and the aim of the philosopher is to find it.

The object of this paper is rather to show the value of philosophy relative to our work, and its influence over the worker, than to prove the existence of what probably but little real scepticism obtains, any that does remain being accounted for by a conservatism which confines it to the higher exposition—viz., that in which the mind is engaged in the analytical researches of its own attributes, such as is exemplified in Locke's "Essays on the Human Understanding." Beyond this there are but the dizzy heights leading to the First Great Cause that few dare explore. It is, however, a pleasing task to work out the connection with, and trace the bearings of, our subject relative to gardening and gardeners.

THE WORK.

To work upon philosophic principles is to understand and to obey certain natural laws; and in this intelligent recognition and obedience is derived the power to command success. All else is chance, and chance is often the road to chaos. Whether it is an Orchid or an Apple tree, a Mushroom or a Mangold, all equally important in their way, they are subjected to certain natural laws of life which may never be ruthlessly broken or seldom evaded with impunity; in fact, if we treat them philosophically we treat them rationally, and, as a rule, successfully. Any exceptions—failures—must proceed either from a subversion of those laws, or from one or other of those peculiar natural methods employed for a higher design than enters into the scope of our mental vision.

"We know all this; it is what every intelligent worker brings into his practice," may be remarked. Exactly so. But there are a few things, and rather important ones too, which are apt to be overlooked. There are more things that enter into our work than in our philosophy. Many men, many methods—various means to the same end. Foresight keeps the one object in view, but views it from different angles, each angle being represented by certain local circumstances which all the windy argument available will never square one with the other.

In our prospective reckonings we too often calculate without our host—Nature; for in the sum total of those computations not only is all that is probable to be taken into account, but all that is possible may not wisely be ignored. If success in any particular direction is not achieved it is either that the estimate has been too high or that something has been omitted in the calculation, for it must be admitted that there is a cause for every effect, be that effect what it may. Apparent inconsistencies will disappear if the subject is considered comprehensively.

We may say—do say—that all calculations are liable to be upset by the forces of Nature; by the May frost which comes in every, say, three or four years, or the hailstorm to smash the glass once in a decade; but what has happened is always liable to be repeated whether on the larger scale of a cataclysm or the smaller—the catastrophies—we are dealing with. The wise man never omits them

from his estimate, making due provision with his covering material against the frost, and with the insurance company against the hail; hence his reckonings cannot be upset, and the foolish man, having not calculated upon these always possible contingencies, the upsetting of his calculations are out of the question. If he calculated to escape, then, indeed, he reckoned without his host, who is too imperious to be so slighted. It is a grand thing, doubtless, to trust in providence if, and I trust no wrong inference may be drawn in saying so, if it is the providence of bast mats and hailstorm insurance premiums, otherwise it is merely tempting providence and courting the catastrophe. In the first instance I hope to have shown that positive philosophy was evident with the wise man, and sufficient of the negative kind in his antitype to point a moral.

When planting a number of common Laurels some years since I was asked what they cost. "Sixpence each," was the reply. "Oh, I bought a quantity from So-and-So, even larger than those, at the rate of a penny each; you know he is not a professional nurseryman, and does not look for large profits." The result was, I sent for 500; they proved to be straggling things, which had never been transplanted, with a few thongs where a mass of fibrous roots should have been; in fact, dear at the price. I need hardly say that the extra fivepence paid for the good plants partly represented the care and labour spent in consecutive replanting, with the necessary time taken to build them up, and the space required for doing so. In regarding the matter philosophically the plants were full value for the money.

Within the radius of my gardening world is an amateur rosarian who says, "I must have Roses, but I have to buy in every year. My soil is bad, I think; and I fear my man does not understand them, for I can never grow them like yours." He is fond of his Roses; but above and beyond that is his love of a bargain (?) So each spring finds him at a certain auction room where "splendid (?) stuff," the clearings of some nursery plot, is obtained for a "song," to the joy of the frugal mind. It would be better for this gentleman, who really loves his garden; and for his man, who loves his work, if a little philosophy went into his Rose dealings. I will not say that what is cheap is not always honest. He probably gets his money's worth, but no more, for the money in this case, both literally and figuratively, represent very little. So I take it that there is philosophy in a Laurel, in a Rose; in fact all through garden work, which, having to reckon with a philosophic Editor, must no longer detain, so I hasten to conclude with

THE WORKER.

If we could understand ourselves as well as we understand our plants, there would, perhaps, be fewer blighted lives and less need for any remarks here. "An Old Provincial" has so ably and so pertinently pointed a moral on page 166, that whether he will or will not allow the existence of what not a few deny, I regard him as a Knight Grand Cross of the noble army of philosophers; the garden variety, of course. This "provincial" philosophy, which few could read and interpret, "calmly," "wisely," "rationally," without both pleasure and profit, lightens my labours considerably. The way in which the chivalrous knight dashed in upon two good men and true, playing a little at cross purposes, and switched them safely and comfortably upon parallel lines, without wounding either, afforded me delight, and he is "An Old Provincial philosopher" to me henceforth.

There is, I believe, more philosophy to be found in a flower show—that is, in the showers themselves, in their victories and defeats, than a whole series of philosophical lectures could exhibit. Now and again we find a defeated man impartially tracing the effect to the cause, and duly and deliberately reorganising his plans for another campaign. He is a grand type of the British gardener, but his presence is rather the exception than the rule. Cause and effect! How hard it is sometimes to trace the connection, but by all the ethics of natural philosophy—of truth, it is there. Men may deceive themselves, but this never can deceive them. It is the lifting of a big cloud of illusions. Passing strange it is to see how comfortably we clothe ourselves in the fancy garments of spurious reasoning; anything rather than the bare truth, which is as plain as a pikestaff when the air is cleared of hallucinations, and reason occupies her throne.

"Very sad," we too often have to hear, that "So-and-so," a well known name in the gardening world, is applying for the benefits of the Gardeners' Royal Benevolent Institution. Sad, in a way, surely; but sadder by far to see men deluding themselves by the false hope that such a fate is impossible to them. Is there no moral conveyed in the story of a broken life, the effects of which are so visible? the cause of which delicacy forbids us to seek. The man who reasons calmly, wisely, rationally, cannot shut such possibilities out of his calculations—ergo, he is calm, wise, rational; he is a philosopher, but he is, too, alas! the exception. But what of the great majority, what are they?

Philosophy in gardening? Yes, certainly, and room for more. Let no one think it a phantom or doubt its verity. There is no false philosophy, for there can be no false truth.—THE SQUIRE.

A DAY IN OLD ORCHARDS.

ON page 26, January 13th, I gave such advice as seemed called for under the circumstances in dealing with two out of five orchards that were visited, reserving further observations on the other three. When it is possible to improve old fruit trees it is wise to do so, in order that they may afford supplies of the best fruit they are capable of producing until the young trees, which should always be planted at the time of renovating the old, attain a fruitful condition. Making a clean sweep of all old trees because they are not capable of bearing anything like first class fruit has often proved a mistake. On the principle that half a loaf is better than no bread, so is a supply of second or even third-rate Apples for cooking better than none at all in establishments where a considerable bulk is needed for consumption.

No. 3 Orchard was very much like No. 1, described on the page above quoted. A grove of trees on one side was pronounced worthy of thinning and cleansing if the varieties were fairly good, but if not, work would be wasted on them, and grafting some of the healthier would be preferable. The body of the enclosure consisting of trees, practically "eaten to death" with canker, would pay far the best by clearing entirely, adding basic slag, kainit (or wood ashes), and deep cultivation as previously advised.

If planted with standard Apples, it would be desirable to choose strong or free growers, such as Alfriston, Bramley's Seedling, Lord Derby, Golden Noble, Warner's King, and Newton Wonder for cooking, with Blenheim Pippin, Devonshire Quarrenden, Cox's Orange Pippin, Gascoyne's Scarlet, and Cackle's Pippin for eating, planting them 30 feet apart, with Plums half that distance asunder between them. Plums often succeed better on the site of an old Apple orchard than Apples do, but strong growing varieties in deeply worked and fortified soil often answer very well.

No. 4 Orchard.—Site wet; young trees making long annual shoots should be carefully dug up and replanted in fresh soil containing lime and burnt refuse, the roots spread out on the surface level of the present ground or slightly above it, and when covered to stand on mounds. The surface of the ground ought to be kept free from grass and mulched with manure on the approach of hot dry weather, not before, leaving the material to decay. Basic slag and wood ashes would act beneficially. The long young branches ought to be shortened to effect a balance with the shortened roots; then if the trees were kept clear and surface rooting encouraged by summer mulchings improvement would certainly follow.

No. 5 Orchard.—No, not quite an orchard, but large individual trees of Ribston Pippin and Cackle's Pippin, isolated in a meadow or pasture. They are large and old, but capable of material improvement by the removal of a great amount of worthless wood, cleansing the remainder, and nourishing the roots. The branches have probably been thinned at some time, and the bristling shoots resulting allowed to struggle with each other till the trees are mere thickets. The resources of the soil have been spent on a mass of wood that not only could give no return in fruit, but had deprived the other parts, which had forced themselves out of the crowd, of sustenance.

AS TO PRUNING.—Superfluous branches should not be shortened, but cut out close to the main stems, and when a saw is used paring smoothly after it with a sharp knife. The whole of the interior wood ought to come out, and only those parts retained the leaves of which are fully and directly exposed to the action of light. There should be absolutely nothing between them and the firmament. That is a very important matter. Leaves made in the interior of a tree are worse than useless. If the winter pruning has not been sufficient for preventing summer crowding, thin out further when the trees are in leaf.

SPRING DISBUDDING.—When several branches have been removed from the interior of trees in winter—cut off close to the main stems as above indicated—in all probability about the end of April, or later, clusters of fresh growths will push from round the pruning "cuts." It is imperative that these clustering growths be rubbed out when they are an inch or so long, or the trees will soon be as much choked with useless wood as before. These interior growths are robbers, as they divert the nutriment supplied by the roots from the exposed branchlets, where alone it can be turned to profitable account in the production and development of fruit.

AS TO CLEANSING.—Not the main stems alone, but the small branchlets to the very tips should be cleansed of all incrustations. This can be done in two ways—1, Washing the trunks and main stems with brine or tolerably hot limewash; then, before the buds swell, dusting all other parts with newly slaked lime when the trees are dripping with wet on a calm misty morning. A man and ladder, with a basket of lime in one hand, with the other dashes the lime among the branches—upwards, downwards, sideways, everywhere, driving it well among the spurs and buds. This adheres, and the rubbish peels off, while the lime which falls to the ground during the application is there beneficial. That is one way, and though good

is not the cleanest for the worker. Another and an excellent method of cleansing trees is as follows:—

CAUSTIC WASH.—For making 10 gallons, the original plan, which has answered well, was to dissolve 1 lb. each of caustic soda and pearlsh, and mix in the above quantity of water. Another method of preparation, described by Mr. Cousins in his "Chemistry of the Garden" Primer, has been found by him still more satisfactory. It is made by first dissolving 1 lb. of the caustic (commercial) soda in a pail half filled with water, then stirring into the liquid three-quarters pound of crude carbonate of potash (pearlash), diluting the whole to 10 gallons, and lastly adding 10 ozs. of softsoap, dissolved in hot water, stirring vigorously to effect a complete mixture. As it is injurious to both clothes and skin, any old garments suffice during application, and the hands should be protected. It is best distributed on a very still day in the form of a mist-like spray, forced from a knapsack pump. A syringe can be used with a very fine nozzle, but occupies far more time, and wastes much material. The solution should rest on every part of the branches and twigs like dew, not run off them like rain. It destroys parasitic growths, and the eggs of most insects. In bad cases two sprayings may be needed, the second just as there are signs of bud-swelling. When once the trees are clean one spraying annually will keep them free from many destructive insect pests.

ROOT NOURISHMENT.—This is very important for assisting enfeebled trees. Different methods are resorted to. The quickest is liquid manure, applied at any time when it will sink into the ground when the soil is not dry. It can be given stronger, and with great benefit, during suitable weather in winter and spring than in the summer. Pouring liquid manure into *dry* soil is wasteful, and may be injurious. The soil is generally in the right condition when trees are swelling their buds.

Stable and farmyard drainage is good; failing this or sewerage, a solution of good guano, at the rate of an ounce to a gallon of water, is nourishing. According to analysis, Chinchas Peruvian Guano is the best in the market (advertised by the Anglo-Continental Company, 30, Mark Lane, London). Not less than 5 gallons of liquid should be poured into each square yard from the stem outwards beyond the spread of the branches for acting beneficially on stunted trees in impoverished ground.

FRESH SOIL.—This is of great value if brought within reach of the roots. A good method of effecting this is by making a number of deep and wide holes with a crowbar, 18 inches apart all over the ground, that the branches of a tree cover, then well pressing down in them fresh loam, containing a sixth part of wood ashes and one shovelful of basic slag to about fifty of soil. It ought to be just moist enough for compression. If liquid manure were poured in the holes prior to filling them with soil, the combination would be bound to do much good.

ROOT-PRUNING.—This is usually resorted to as the best of all methods for subduing the growth of over-luxuriant trees, but if rightly practised, may benefit the enfeebled. Cutting the roots of these near the stems, however, would lead to further enfeeblement. They must be cut some distance from them by digging out a wide trench 2 feet deep or more nearly as far as the branches spread, cutting smooth with a knife the ends of the spade-chopped roots from the under side upwards. Then by filling the trench with some fresh soil and a liberal amount of manure, with a sprinkling of basic slag, and any quantity of burnt and decayed vegetable refuse, pressing the whole down firmly, the emission of feeding roots would be incited and the growth of the trees consequently improved, as is the case through new roots taking possession of new soil in the holes above mentioned. If roots cannot be found where the circular trench is made, dig back till a goodly number are met with of the thickness of the finger to that of a stout walking stick, and treat as directed. This is best done when the leaves are falling in the autumn, but fresh soil may be given by the crowbar method at any time. It has proved highly beneficial to numbers of old trees.

No. 6 Orchard.—Soil too cold and strong. The larger trees, but not old, require cleansing; and some a little thinning. Young trees making Willow-like growth would be improved by carefully replanting as advised for orchard 4, adding fresh lighter soil, and mulching thickly in early summer, the manure to remain and decay. Let the grass be dug from round other young trees, adding fresh soil, containing lime or basic slag. Leave the surface exposed, for the sun to warm the soil, stirring it occasionally; then, on the approach of dry summer weather, spread on a covering of somewhat lumpy manure—not a close plaster. This is to prevent the soil cracking and drying near the surface, which causes the roots to strike downward for moisture in the cold sour subsoil, the resulting growth being then, however strong it may appear, of an essentially unhealthy and unfruitful character.—ADVISED.

IMPORTANCE OF CHANGE OF GROUND FOR PEAS.—Peas are a crop which do not succeed well year after year on the same soil. This is because nitrogen accumulates in the soil, and though plenty of haulm and leafage may be developed, the production of seed is not large.—S.

CHARACTER UNDER CANVAS.

1.—UNJUDICIAL JUDGES.

If the Prime Minister of Great Britain ever has glimpses of his personal greatness, they must fade when he visits a horticultural exhibition and finds his ineffectual fire paling under the glowing radiance of the unjudicial judge. It is true the statesman has the power of shaping the destinies of the world; he can control the movements of the most powerful fleet that ever sailed the seas; in the hollow of his hand lies the fate of millions of human beings; but—he cannot judge a brace of Cucumbers. Therefore the unjudicial judge looks down on him with delightful contempt, and relegates him to his proper place in the life of the nation.

It is given to most of us to have brief periods of ecstatic happiness. They are rare, they are fleeting, but they exist. Who seizes upon them so eagerly and extracts the last particle out of them so resolutely as the unjudicial judge? His days of pure delight are those on which he finds himself chosen, in preference to his rival over at the Grange, to judge at the summer show. Owing to a disappointment, a certain committee once found itself under the necessity of finding a judge at eighteen hours' notice. The secretary formed himself into a deputation, and visited a neighbouring gardener. The latter did not allow any false pride at being only chosen in an emergency to stand in the way of an eager acceptance. He took the schedule, marked his instructions, and showed the secretary over the flower garden. "Are you showing in the six Asters?" asked the newly appointed judge. "Yes," responded the secretary. Silently, but with a noble determination, the judge snipped off half a dozen of his best blooms. "Take 'em in your 'at," he whispered in tones of devoted friendship.

There are special moments when the unjudicial judge shines at his brightest. Take, for instance, his bearing when, after his duties are done and a substantial lunch has been disposed of, he saunters, much badged, into the show and surveys the scene of his labours with unctuous pride. There swoops down upon him an irritated exhibitor, who demands to know why a certain decision has been made. Is the unjudicial judge taken aback? Perhaps for a short space his confident bearing shows traces of a shock; but with a presence of mind worthy of the highest praise, he recovers himself, eyes the angry critic with calm benignity, and says, "T'was my partners; I didn't want 'em to do it, but they was two to one!" After a fairly lengthy experience of exhibitions, I have come to the conclusion that the greatest monument of incompetence this earth can boast is the mysterious "partner" of the unjudicial judge.

It is with a proper sense of humility that I speak of one particular occasion when I myself had been the erring "partner." The judging was done, the lunch was over, and I, book in pocket, retired to the shady side of a tent to pass the time before the prize-giving. The clatter of glasses, not less than the loquacious run of tongue, betrayed that it was the refreshment tent. While wrestling with a Meredithian epigram there fell upon my ear the voices of the judge with whom I had been associated and a stranger in a duologue that began fiercely and ended like the cooing of a dove.

"You a judge!" (this with ineffable contempt) "reckon you don't know a marra from a squash."

"T'was'n me, you fule, 't'was my partner."

There was a short but eloquent pause, during which a guilty sense of wrong-doing made short work of my mental peace, and then, in reply to another remark which I could not catch, the unjudicial judge said, in soft tones of amity, "Well, I doan't mind if I do; one bit of sugar and no lemon."

The cheerful magnanimity with which the unjudicial judge throws his partner to the wolves is not more impressive than the air of terrific superiority with which some members of the genus listen to the remarks of their fellow judges, and afterwards give the criticisms off as their own. Men of this stamp are known who, when invited to give an opinion as to the merit of an exhibit, wander off into particulars of domestic history, giving details of what they have at home, but "not allowed to show, you know," and other interesting information, all the while evading the point at issue. These gentlemen are invariably to be observed later in the day enlarging on the exhibits in loud and argumentative tones. There are plenty of persons who have never been known to give an opinion, or to make an independent decision, while the judicial work is going on, who are in universal demand as judges, solely from their copious and profound expression of other people's opinions when the duties of the day are done.

Fierce assertions of unswerving rectitude are not uncommon on the part of the unjudicial judge. It is true that there is usually no particular reason why they should be made, inasmuch as no charge of partiality is circulated. But this species is so full of the responsibilities of his position, that he runs over and emphasises every award with assurances that he is not to be got over. "No use a trying that with me," and so on. It was with a judge of this tremendous integrity that I once became involved in a tedious argument about a bunch of white Turnips. Those which he wanted to put first, I wanted to put third. After striving unavailingly to get me to agree with him, the unjudicial judge drew me aside, with an air of touching reproach, and said in my ear, "Look here, now; if you'd got a boy Sammy—"

I stared in amazement. "A wha—at?"

"You haven't, eh! But I have. Do you see?"

Gently, insinuatingly, the righteous judge scribbled "first" on Sammy's card, and led me away.—W. PEA.



PRUNING ROSES.

ALTHOUGH such a very mild season, I do not think our Roses more forward than usual, and certainly would not prune earlier than after winters of ordinary severity. It is not early growth which we want upon Roses, but breaks from healthy eyes, and these made sufficiently late to insure a greater chance of quick growth, unchecked by the late spring frosts which so often ruin early and promising new wood.

With a view to making the present article upon this important part of Rose culture more plain and simple, I have taken a few rough sketches of



FIG. 44. TWO-YEAR-OLD TEA ROSE. FIG. 45.—H.T. CAROLINE TESTOUT

types of plants growing in my garden, and which I shall prune upon the lines indicated in the illustrations. It does not matter whether it be Hybrid Perpetuals, Teas, Hybrid Teas, or any of the other classes, our Roses of similar growth to those described need much the same treatment.

Fig. 44 represents a two-year old plant of a Tea Rose of an erect growing variety, which flowers freely from almost every shoot, and which may be chosen as a type of such as Anna Olivier, Catherine Mermet, Madame Lambard, and others of the similar habit. The shoots from the base, marked *a*, *b*, and *c*, are soft and pithy, although they carried good blooms late in the season. From 6 to 12 inches from the base of these there is a sound eye or bud, and the wood will be cut back to this point. The remainder of the growth will be cut back, as shown by the cross marks. Most of the wood above these marks is inclined to be soft, and will, under any circumstances, be cut back to a sound and well-ripened eye.

Unless we prune this class of Rose rather hard we get a succession of new growths from the top eye, which, on account of the erect habit, soon make a thin and pyramidal plant, instead of the desired bush of more compact form. We have much the same habit in Merveille de Lyon and



FIG. 46.—H.P. DUKE OF EDINBURGH.

Baroness Rothschild from among the Hybrid Perpetuals, although more robust. These varieties very seldom carry soft and unripened wood, but

owing to the same erect habit, I would cut them back almost as hard as shown in the cut.

An old and fairly strong plant of Comtesse de Nadaillac, Sunset, Perle des Jardins, Souvenir d'Elise Vardon, and a few more, will often produce a succession of stout shoots from the base, as marked *a*, *b*, and *c* in fig. 44. Instead of cutting these down so hard I would only prune back to the first sound eye. Nor should any well matured wood of these be cut away except to thin out the growth where rather crowded and dense. Horace Vernet, Duchess of Bedford, Louis Van Houtte, and similarly habited Hybrid Perpetuals, grow in the same erratic fashion in most gardens, and need the same style of pruning. It is a general rule to prune a Rose hard if a weak grower, and very slightly when of extra vigorous habit, but in the few last instances I would leave almost all of the sound eyes.

Fig. 45 is a plant of Hybrid Tea Caroline Testout, also two years old. Here we have a Rose of entirely different habit, one which makes a succession of growths all through the season, and, although not so spreading as some, forms a much wider bush than in fig. 44. My plant is carrying the same shoots as shown. The three portions of dead wood will be cut back to a sound eye, and the remainder shortened and thinned according to the cross marks. This will result in a compact bush, which in all probability will be twice its present size next autumn. Much of the wood cut away in this case will be thoroughly sound and ripe, but by pruning, as illustrated, we get a better bush, flowers of better quality, and quite as many of them.

There are many varieties with a somewhat similar habit to Caroline Testout. Mrs. Bosanquet, Goubault, Madame Falcot, Madame Willermoz, Kaiserin Augusta Victoria, Rosa Mundi, Souvenir de Paul Neyron, Marie Van Houtte, Francisca Kruger, and Alfred Colomb may be cited as examples needing the same pruning. We also have Dupuy Jamain, Général Jacqueminot, Mrs. John Laing, Camille Bernardin, Charles Lefebvre, Fisher Holmes, Maurice Bernardin, Prince Camille de Rohan, and several other varieties which range between figs. 45 and 46 as regards habit and vigour of growth.

Fig. 46 is a two-years-old Duke of Edinburgh. The cross lines show where to prune this if a bush plant is wanted; and the four dotted lines, where it should be pruned if intended for pegging down, as exemplified in fig. 47. For this purpose the long sucker-like rods, *a*, *b*, *c*, and *d*, will only be pruned back a few inches from the point, and then secured in a horizontal position, when they will flower from almost every well-ripened eye. The vigorous Teas, Hybrid Teas, and Hybrid Perpetuals may be treated similarly, following one or other of these systems according to

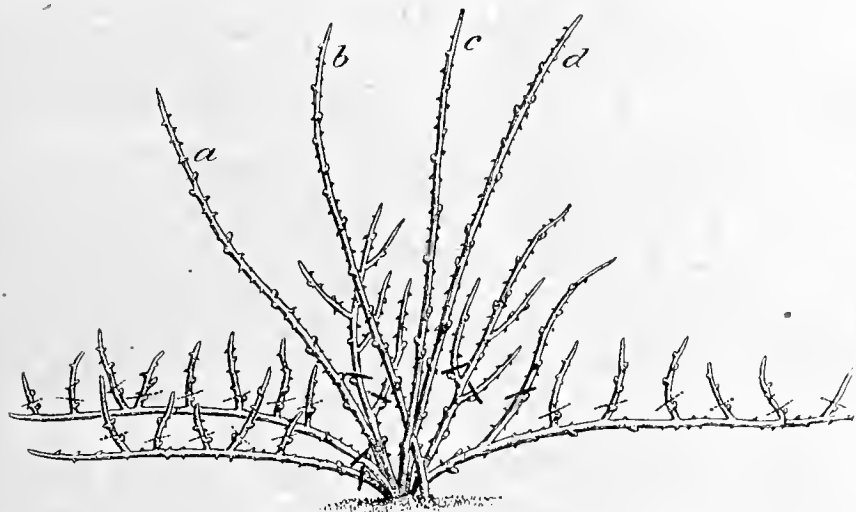


FIG. 47.—H.P. MADAME GABRIEL LUIZET.

whether a fairly well-shaped bush, or a larger quantity of flowers are needed. Those varieties named as between the types of figs. 45 and 46 should be pruned midway between the two illustrations.

Fig. 47 represents a Madame Gabriel Luizet that was pegged down last year. The side shoots have flowered, and should be cut off at the cross marks. It generally happens that the wood upon these layered shoots is so ripe and sound that many are tempted to prune, such as shown by the dotted lines (figs. 46 and 47), but if we do so we get a less number of flowers, and these of inferior quality to what would be the case if the long shoots *a*, *b*, *c*, and *d* were pegged down, and the older wood cut out entirely. There are many of our very vigorous growing Teas, Noisettes, Hybrid Perpetuals, and others, which give a far better display when pegged down in this way than grown as an ordinary bush.

When these same varieties are upon a wall or fence, it is better to save as much as possible of the longest and most vigorous growths, making room for these by cutting out older wood.

Standards of the same classes or types of Roses need the same style of pruning, the long rods in figs. 46 and 47 being allowed to droop over with the weight of growth and blossom. As a rule the Mosses, Cabbage, and Gallica Roses are best when pruned upon rather harder lines than recommended in fig. 44. The Scotch and Japanese Briars, also the Polyanthas, merely require the points of dead wood removed.

Fig. 48 shows a Rose planted in the autumn, one of many thousands that will soon need pruning. The upper buds are elongating considerably, as is the case also with the older plants above referred to, though the advancing growths are not depicted. As a rule the longer in reason these

basal buds remain dormant the safer the growths which issue from them are against the accident of frost, and the earlier the pruning the sooner those buds are pushed into danger. That is why many cautious persons defer the pruning till March is well advanced, and then the stems of the young Roses are cut down to the marks or lower, even at the risk of some "bleeding," from which plants unchecked by frost soon seem to recover.

So far as the best time for pruning Roses is concerned quite as much depends upon the position as the season. In low and moist situations we suffer from late spring frosts much more than upon a high and fairly dry soil. Nor do the plants in the latter case make such precocious growth as when in a warmer and more sheltered spot.

Make it a point to cut back to a sound eye, have this facing away from the centre of the plant where possible, and cut the wood back close to the terminal eye or bud.

The rambling Roses, such as Ayrshires, Boursaults, Evergreens and Hybrids of similar growth, merely need some of the older wood thinned out and last year's shoots left their entire length.—PRACTICE.



FIG. 48.—PRUNING NEWLY PLANTED ROSE.

ANOTHER MIXTURE.

THE STRAWBERRY AS AN ANNUAL.

WHERE there is no lack of labour in gardens, or where a gardener is fairly well handed, the question of the cultivation of the Strawberry as an annual will gradually resolve itself into a general practice. There was a time when plantations of Strawberries were kept going for years, producing average crops of undersized fruit, admirably suited for preserving, and nothing else; but in the present go-ahead days a gardener is expected to grow them as large as possible. Nothing short of a fruit an ounce weight seems to satisfy some employers. That this can be accomplished is evident by various reports last year of Strawberries scaling 3 ozs. This weight seems incredible even in this age of gigantic productions, and, if correct, the fruit would require more than the proverbial "two bites" to dispose of it. Annual planting has much to recommend it, especially with certain varieties, such as King of the Earlies, Royal Sovereign, President, Scarlet Queen, and La Grosse Snerée, with Vicomtesse Hericart de Thury, Keen's Seedling, Grove End Scarlet, and others, that are suitable for preserving; these would stand two or three years. The secret of good culture rests in layering early, from maiden plants if possible, planting in firm, rich, warm borders or beds in July or August, well mulching with half-decayed manure, watering the plants in dry times, and well bedding down with litter in early winter, having previously kept down all weeds and removed runners.

HATCHING EARWIGS.

Recently I had occasion to have prepared several pits for early Potatoes and Carrots. The material used was ordinary stable manure and leaves, the latter predominating, which, after a few turnings, was put in, made firm, and soiled. Chancing to lift one of the lights during a sunny day, I was astonished to see hundreds of baby earwigs perambulating the surface of the warm soil, evidently stretching their limbs and developing their bodies in order to be in better training for the Peaches and Apricots when ripe, where they will without doubt migrate. Is it correct the female broods her eggs and hatches them, or has the artificial heat acted in the way of an incubator, and brought forth this very undesirable family? They were present in all stages of early life, but I did not see any old ones present. There are still incredulous folk who will not be convinced that earwigs have the power to fly. That they can, and do in numbers, I have testified on various occasions. The best traps I find are hollow tubes of dry Hemlock, or anything of that kind, placed about the trees, blowing the pests out every morning into a wide-mouthed bottle, with a little paraffin or hot water in. I have had the tubes completely blocked at times with a huddling mass of full-blown earwigs after a night's gorging and feasting.

CHIMONANTHUS FRAGRANS.

This is a very sweet-scented desirable shrub, flowering as it does in the early months of the year before the leaves make their appearance. We have it against a west wall. It appears to flower in the axils of the previous year's growth, rendering it most necessary to be pruned after flowering to induce well-grown shoots, which, if ripened, should produce the maximum of flowers. It thrives best in good light soil, and is benefited during the growing season with supplies of liquid manure. If a few of the flowers only are cut they prove sufficient to permeate a room with delicious fragrance. It has a similar scent to Daphne indica, and its time of flowering corresponds. We are not too well off for such shrubs as the Chimonanthus, the flowers of which are so welcome early in the year by their sweet perfume.—GEO. DYKE, *Stubton Gardens*.



NEW FRENCH CHRYSANTHEMUMS.

"OBSERVER" (page 172) is, of course, not aware that my article on this subject was written a long time before its appearance in print, possibly being crowded out by more pressing matter. If Mdlle. Lucie Faure and Madame Ferlat had been authoritatively pronounced as incurved, I should have conformed to that ruling; but when novelties are seen for the first season, individual writers can only form their own impression of them from such examples as come under their notice. "Observer" may, no doubt, consider the task an easy one to decide for himself whether a novelty is incurved or Japanese incurved; but I notice that even my friend Mr Molyneux protests against the free and easy way in which some of the "mongrels" are being included in the true incurved section, so that difference of opinion would perhaps have been a better word to use than misrepresentation. "Observer" carries his criticism a little farther, and objects to some of the descriptive terms I employ. If "Observer" does not know the meaning of "distinct novelty," I can only say that Madame Ed. Roger is a novelty because it is new; that it is distinct because it is green, and unlike any other novelty.—C. H. P.

BELFAST SHOW REFLECTIONS.

AS regards the variety shown by Mr. Mease as Yellow Madame Carnot at Belfast, Mr. Brock refers me to Mr. Molyneux's notes on new varieties in your issue for December 9th. Allow me to inform him that Mr. Molyneux was one of the judges who passed Mr. Mease's fine bloom at the Royal Aquarium labelled as Yellow Madame Carnot, and Mr. Molyneux's remarks on new varieties were not made till after the shows, when he would have had every opportunity of thoroughly examining all the different sports in question. I well remember when Charles Davis was brought before the Floral Committee of the N.C.S. by various exhibitors, the colour variations were far more distinct than any forms of yellow sports of Madame Carnot. Mr. Mease, no doubt, made himself thoroughly acquainted with the Belfast schedule before sending such a distance, and surely such an old hand at exhibiting would not knowingly risk staging a variety that was not in commerce. I always thought it is a mistake to confine exhibitors to varieties in commerce. It is perplexing both to exhibitors and judges, and as far as I can see answers no good purpose. Respecting the cardboard used, I said nothing about its being legitimate. I thought I made it clear that if the cardboard were removed the exhibitor would have been placed in the same position on the merits of his blooms alone. I can assure Mr. Brock he need not apologise, at least to me; my feelings are not wounded in the slightest. I rather delight in fair criticism.—E. BECKETT, *Aldenham House Gardens*.

PERHAPS a little explanation from me may put the matter *re* Primrose Madame Carnot a little more satisfactorily. I was the introducer of G. J. Warren, and Mr. Jones introduced Yellow Madame Carnot, which to all appearances were the same. I had also heard of or seen six other yellow sports from various places, one of which was at Box Hill, and which Mr. Mease was growing. These various sports were all supposed to have been the same in colour, and although Mr. Mease had the champion flower in the November show of the N.C.S., no one would have known whether it was any different from G. J. Warren in the bad light. Indeed, I believe Mr. Mease fully thought then, as I did, that they were the same, and sent his blooms to Belfast honestly thinking he was acting according to the schedule.

Not being an exhibitor I had not noticed the regulation that "All blooms must be already in commerce." As I was assisting Mr. Mease's man in naming his blooms the good light enabled me to see the bloom in question was not so deep in colour as G. J. Warren, but a primrose colour. I, therefore, said that was not G. J. Warren (syn., Yellow Madame Carnot), and I advised that it be simply described "Primrose Carnot," quite ignorant of the conditions. Moreover, had these conditions been in the mind of Mr. Mease's assistant he had plenty of spare blooms, and could easily have rectified the matter, and he would then have held exactly the same position. I can fully sympathise with Mr. Beckett, and do not see how he could have done otherwise than he did under the circumstances.

As I fear that I was the cause of all the trouble which has arisen by the suggestion I innocently made, I think the above explanation is due to all concerned. I am quite sure that Mr. Mease would not attempt to evade any conditions, and I am also sure that Mr. Beckett felt the difficulty of the position in which he was placed and did what he thought was right. I have absolutely no personal feeling in the matter. I think Mr. Brock was justified in bringing the matter forward, and should like to see him defeat all comers next autumn.—W. WELLS.

[We think the explanation of the matter in dispute is as clear as it can be made. The "bad light" in the Aquarium was quite inadequate for detecting different shades of yellow, and we fully believe that all who have been personally interested in this case acted in the best of good faith. Mr. Brock was justified in bringing the matter forward. We think when large sums of money can be provided for sensational prizes, two judges should be engaged as security against accidents, and when this is not

done we are inclined to regard the show authorities largely responsible for what may happen of the nature indicated. After no small experience with a goodly number of highly capable and deservedly trusted judges, we have not discovered the prodigy of infallibility.]

DECLINE OF INCURVED CHRYSANTHEMUMS.

I DO not think there is one person of experience who will attempt to refute the above heading. Visitors to the autumn exhibitions in various parts of the country find a steady decline in this type of the autumn queen. Not only a backward tendency in popularity with visitors, but a gradual falling off in the quality of the blooms. No doubt there are strong reasons for this rapid decline in the true Chinese or incurved Chrysanthemum. Writers, cultivators, and visitors will draw their own conclusions as to the cause. Having perhaps as much opportunity as most persons who are interested in this section, owing to my extensive tours annually to the principal exhibitions, I have decided in my own mind what are some of the causes of decline in this section. Although the exhibition table is a good basis to found a reason upon, it cannot be urged that it is the end of all that appertains to Chrysanthemums. Many persons who object to exhibiting pay annual visits to the autumn meetings to view the productions of others, and may be to pick up an occasional wrinkle or two.

I do not purpose dealing with this subject purely from an exhibitor's point of view, but rather in a general way. No one, however, will doubt that to see the finest specimens of incurved Chrysanthemums we must visit the exhibition table. Although some of the finest blooms as grown are often seen on purely decorative plants, yet the finishing touches are usually seen upon the exhibition table. It cannot be urged that any decline is due to a want of recognition in the various prize schedules. In the palmiest days of incurved Chrysanthemums the prizes offered were decidedly inferior in value to what they are at the present time. It is not an uncommon occurrence now to find a class for twenty-four blooms, these not distinct, for which the handsome sum of £10 and a silver cup are offered as the first prize. Exhibitors of experience know well how much easier it is to fill a class where half a dozen duplicate blooms are allowed as compared to the distinct requirements of classes. The decline then is not due to want of encouragement.

If we desire to seek for reasons, from an exhibition point of view, we must recognise the weakened constitution of certain varieties or families. Whatever may be the cause of this, it cannot be doubted that there is this deterioration in stamina. Take, for instance, that group known as the "Tecks." Can it be argued that a single bloom of any one of the seven varieties comprised in the family is seen nowadays that in any way resembles those grown half a dozen years since? He would indeed be a bold man who says yes. This once valued type has been in existence thirty years, being introduced by Pethers 1868, and four years after saw the first sport in the form of that charming rose pink flower Hero of Stoke Newington. As showing the value of this variety for exhibition, it was almost invariably found in the back row in the strongest competition. I mention this to show the difference existing a few years as compared with the present day. Nowadays it is difficult to find this variety in a stand, which proves conclusively its decadence as an exhibition flower. Even Princess of Wales is now only a shadow of its former self. No variety has taken or assisted to secure so many prizes as this when staged in what is known at an undressed condition. The natural form, beauty of floret and solidity of the whole bloom of a fully-developed "Princess," was indeed something to admire to a lover of incurved Chrysanthemums.

But from an exhibition point of view the greatest declination is in the Queen of England and its light offspring. The original of this group was introduced by Salter as long ago as 1847. Twenty years ago it was no unusual sight to see plants 10 feet high, while now the difficulty appears to be to get them half that height. Some cultivators may urge that this is desirable. I have, however, seen the finest of the blooms that have been produced during the period named, and not infrequently the plants bearing them also, and if it were an easy matter to obtain exhibition blooms from tall plants in days gone by, and it is quite the reverse at the present time from dwarf plants, the conclusions to be drawn are too obvious to need comment. Can cultivators induce their plants to grow as strong or as tall as they would wish? If they can and then do not produce representative blooms, what is the reason? To what source but that of deteriorated constitution can we attribute the decline of varieties that are well known to be of the first-class?

Counteracting influences are advocated, such as planting out and growing the plants for a couple of years in poor soil. The idea is that the constitution of the plants has been weakened by feeding and other unnatural methods. I confess I regard such opinions as those of pure theorists. It is very well for a person to give it as his opinion, based purely upon supposition that the above remedy is the all-saving ground for success; but I for one do not accept it, for the simple reason that I have put such proposals and many others to the test, in the hope of securing creditable examples of the various members of the "Queen" family. Repeated experiments of changing stock, propagating on the coolest of methods that a cold frame will admit, in the hope that the slowest of the initiatory growth would lay a foundation for a more substantial superstructure, have all failed. Twenty years since I saw better blooms of the "Queen" family growing against a south wall in the near neighbourhood of Liverpool than three parts of those seen on the exhibition table last season. How do theorists account for this? Many exhibitors of the present day do not take the same personal interest in the growth of the plants or the preparation of the blooms for showing as was the case a decade or two ago. Too much of the work

is left to the inexperienced hands of the journeyman, whose duty it is to grow the Chrysanthemums from beginning to end. Nowadays there are exhibitors who expect to engage a youth capable of cultivating Chrysanthemums up to the best exhibition form. Need we wonder, then, if there is decline in some of the sections, especially in that which is by all admitted to be the more difficult to produce?

When summing up the causes of the decline of this once popular flower it is well to look all the points sternly in the face with a view to remedy. The introduction of new varieties of doubtful character is all in favour of a decline in interest in the section. At least a dozen leading sorts might be named to which exception can easily be taken. There is too much inconsistency in some varieties ever to make them sufficiently reliable as a means of improving those whose position they now occupy. Many growers rely so much on mere size instead of recognising quality as a first step towards perfection. It does not require a wide stretch of imagination to compare some of the present day blossoms with old Fingal, for instance, which I regarded little better than a hedgehog in appearance.

I now come to the cause of what I term the general decline of the section as exhibition flowers for decorative purposes and as a type of the autumn queen. The many attractions offered by the more recently introduced Japanese section have done much to elbow their more forward rivals out of public favour. I am not surprised at this change. What an immense advantage is found in the use of Japanese Chrysanthemums for purely decorative purposes as compared to other sections generally, but especially to the incurved class. The points so overwhelming in Japanese are so well known that there is little need to rename them. The loose feathery appearance of the blooms, coupled with such infinite variety of colour, at once places them a long way ahead of their opponents. Worthy of emphasis, too, is the strength of the peduncle of nearly all Japanese as compared with many incurved sorts. Never was there a better opportunity of comparing the value of the two sections as decorative objects than that afforded by the competition for the valuable prizes offered at the last autumn exhibition in Edinburgh in the class for a certain number of blooms on long stems staged in vases. One exhibitor staged a mixture of incurved and Japanese. The former looked too "lumpy" to be pleasing, while representative specimens of the latter provided many enviable features.

If we compare a stated number of plants grown on what is known as the decorative system—viz., plants to produce blooms in quantity—then the effect is still worse, as the peduncles are more weakened in some varieties, while the colour diminishes perceptibly in certain sorts. To sum up the whole case in as short a sentence as possible, the incurved Chrysanthemum is irretrievably on the decline.—E. MOLYNEUX.

"THE CHEMISTRY OF THE GARDEN." *

THIS is one of those neat little pocket primers which the publishing firm of Macmillan & Co. have of late given to the world with such good results. Like its red-covered predecessors, its cost is the ordinary shilling, and again like to those it is exceedingly clear, and, as it ought to be, almost elementary in its teachings. The author, Mr. H. H. Cousins, who is one of the professors of the South-Eastern Agricultural College, Wye, Kent, where horticulture is also keenly studied, seems to have been touched by a complaint recently made in the *Journal of Horticulture*, that no such little cheap elementary book as he has now furnished was in publication. Certainly he seems to have filled the void with remarkable success.

Naturally the primary text of the book is manuring, or plant feeding; but the author has wisely, though briefly, opened with a chapter on "Plants: Their Composition, and How They Grow;" because it is indispensable that the student reader, be he professional gardener or amateur, should fully understand a plant's requirements ere he sets about feeding it. This little excursion into plant physiology is accompanied with language of the most easily understood character, being devoid of scientific technicalities. It is a short excursion, which should whet the minds of all readers for a much longer one, into a theme that should be for all gardeners entrancing.

Next we find the air, and the part it plays in plant production, dealt with, and there again valuable information afforded, because many cultivators, ignoring the exceeding importance of ample light and air to plants, neglect the furnishing of these elements, whilst they squander money liberally in purchasing good or bad root foods. Mr. Cousins briefly refers to the recognised capacity of leguminous plants to gather nitrogen from the atmosphere through the agency of root nodules—a matter of exceeding interest to know; but the cultivator also recognises the fact that such faculty is greatly helped when nitrogen, associated with other foods, is applied to the soil, and the plants, not crowded, have ample light and air. Ammonia, so often found floating in the air in association with manure heaps, is so much waste to the owner, because it should be buried in the soil. Not infrequently falling rains wash it into the soils of others. Still olfactory evidence of its presence should warn all concerned that waste is proceeding.

A chapter is well devoted to soils, the diverse characters of which are admirably described. Naturally it is important that the composition of these should be generally understood by the gardener, if only in an elementary way. The author regards the presence of chalk in the soil as a most valuable ingredient, but he goes rather far when he asserts that

it is an absolute essential to fertility, as the alluvial deposits of the Thames valley, for instance, are very innocent of chalk, yet are exceedingly fertile. All the same, an occasional dressing of chalk is good, but in many localities the material has to be furnished by means of occasional lime dressings.

Very important indeed are the remarks as to drainage and its bearing on soil temperature. This is a simple matter, but all the same too little understood or regarded. The presence of water choking air passages signifies cold, because it is so long before the moisture can be evaporated and warm air find access. Gardeners of all classes so fond of dabbling heavy mulchings of manure in the winter over the roots of fruit trees, Roses, or myriads of other things to protect from frost—a problematical benefit if the manure be gross and wet—should always remove these dressings in the spring that the sun may as early as possible warm the soil, and thus give the roots active and healthy stimulus. Summer mulchings applied in May or June after the soil has become well warmed are then most valuable.

In a succeeding chapter the author asks the pertinent question as to soils—"What is fertility?" and proceeds to describe it, and how estimated and created. He is here a little hard upon some of the nostrums put into commerce with such glib recommendations by well paid or interested persons, and to which special reference is not here needed. The value of experimenting with various manures, true and false, is urged; and, indeed, whilst in a sense few may find the product pecuniarily profitable, yet very much valuable experience would result. It is obvious, however, that let these experiments be conducted by the most learned of scientists, or otherwise, they have no value whatever if tainted by self-interest. From that element we are sure the Agricultural College at Wye is entirely free.

Mr. Cousins evidently regards the ash or burnt produce of plants theory, as bearing on their food needs, as fallacious. It is rather hard to have comfortable theories of this nature so roughly knocked on the head, because the student naturally feels that for his belief in these matters it is difficult to find a resting place. All the same, it is the duty, and should be the mission of scientists as they become through experience wiser, to knock down old and firmly cherished beliefs of still older scientists without compunction so soon as found to be fallacious. Eventually the chapter in our little primer on garden chemistry leads up to the heart of the matter—manuring; and here is opened a subject wide enough indeed, and abounding with interest, but yet treated in so simple and practical a way that he who runs almost may read and understand. Animal, green, and artificial manures, their compositions and adaptabilities, are very fully dealt with; and as if not satisfied with conquering that matter, Mr. Cousins adds a few chapters on garden enemies, and the way in which, with the aid of chemical solutions or compounds, these may be kept in check or exterminated.

All these things are, however, for the reader, and that should be every gardener, young or old, professional or amateur, in the kingdom. To young gardeners especially the book will be of exceeding value, because it will furnish them with abundant matter for thought as well as most important information. Candidates for the Royal Horticultural examinations will find it a capital text book, and it is in some respects more clear and up to date than are the rather costly books by assumed superior authorities so often recommended. I notice with special pleasure that the author in relation to spraying fruit trees and Potatoes recommends parish councils to obtain spraying outfits for local use. I have often advised this, and gone farther and urged that local authorities should have compulsory powers to use these in any place so soon as evidence of need for their employment was furnished.

This instructive and essentially useful primer has been edited by Mr. J. Wright, whose aid the author generously acknowledges, and an equal blending of science with practice in gardening is not, so far as I know, elsewhere to be found at the price.—A. D.

KEW BULLETIN.—The November issue of this publication, which has just come to hand, is almost wholly devoted to a report of the proceedings of the West Indian Royal Commission. The inquiry has apparently been an exhaustive one, and has evidently been conducted with care. The Commissioners were Sir H. W. Norman, Sir Edward Grey, Bart., and Sir David Barbour, K.C.S.I., who were accompanied by D. Morris, Esq., D.Sc., C.M.G., Assistant Director of Kew Gardens as botanical adviser. The concluding observations of the Commissioners are:—"We cannot close our report without expressing our strong sympathy with the planters, who have struggled against very adverse circumstances to maintain the sugar industry, and with the very numerous persons who depend directly or indirectly upon that industry, and have severely suffered from its decay. Among the latter we would include not only the labourers, but many of different races and a higher social class, who, as clerks, overseers, artisans, tradesmen, or in professional vocations, have been impoverished by the depression in sugar. Our own task has been of a discouraging nature. Our duty has been to inquire into the condition of a depressed and failing industry, and to consider if any means are possible for restoring and maintaining the prosperity of those colonies that depend upon it, and, in any case, to suggest the establishment of other industries which might supplement the cultivation of sugar cane, and, in case of need, provide means of subsistence for the people. Our conclusions will, no doubt, disappoint many who have looked for some immediate and substantial relief, but, with the most sincere wish to do all in our power to help the West Indian community, we have not felt ourselves able to make other recommendations than those which we now humbly submit for your Majesty's gracious consideration."

* Macmillan & Co., Ltd., St. Martin's Street, London, W.C.

HOLLYHOCKS FROM SEED.

IN years gone by, before these noblest of old English flowers were stricken by the fungus, *Puccinia malvacearum*, they were seen in practically all gardens, and never since then have our gardens and pleasure grounds been furnished in such an imposing manner. Huge clumps of towering spikes, bearing massive flowers in pure, rich, and varied colours, were seen almost everywhere, while long lines, either flanking walks or as a background to borders, resembled floral walls or pillars of beauty.

In the pre-disease days choice varieties were increased by cuttings or grafting, and named collections were grown in gardens in various parts of the kingdom. They were also in strong force at flower shows, the spikes being some 2 feet long, the tops having been removed and the buds thinned for affording space for the development of handsome blooms. These massive spikes were inserted in pots of damp sand, and hundreds of them often placed in competition.



FIG. 49.—DOUBLE HOLLYHOCKS.

Blooms were also in proportionate numbers displayed in stands in the same way as are Chrysanthemums, Dahlias, and Roses. If such Hollyhock displays were seen now they would cause something like a sensation.

Named collections exist still, particularly in the north, where the disease does not appear to have been so virulent as in the southern and midland counties. Whether it might have been subdued if Bordeaux mixture had been discovered and systematically applied in the early days of the fungus visitation can never be known; but what is known is that it swept like a scourge over the country and practically exterminated the grand race of double Hollyhocks. It was noticeable, however, that where clumps of the old rosy single forms were established, as in cottage gardens, that these to a large extent escaped, if not injury, at least destruction. Whether this was the result of innate hardiness, or through being left to "grow themselves" in poor soil, is not known; but what is known is this—gardens have presented a more or less "empty" appearance since the stately and massive double Hollyhocks were driven away.

Plants were also raised from seeds in those days, and the seedlings in turn became infested. In all probability the disease spores were sown with the seed, and it is not easy to imagine "clean" seed being obtainable. Happily the case is different now. Plants may be seen

once more, and in steadily increasing numbers yearly, raised from seed and only allowed to flower once, as biennials, which are free from the destructive parasite, and the seed from such plants is "clean." For decorative purposes, then, Hollyhocks are again possible in our gardens by raising plants yearly from such seed and treating them as annuals or biennials, and this is the cheapest of all methods of providing a display.

It may, perhaps, be a "new notion" to some young men to suggest growing Hollyhocks as annuals, as they may not have seen them raised and flowered the same year; but this has been so with thousands, and they are as worthy of being so treated—i.e., flowered and destroyed—as are the perennial blue Lobelias. In not a few large gardens in the kingdom Hollyhocks or other flowers are even more acceptable in the autumn than in the summer for greeting the home-coming of "the family" after a few months of absence.

By sowing Hollyhock seed in January, or even perhaps at the present time, very thinly in gentle warmth; growing the seedlings in a very light position for keeping them sturdy; transplanting them 3 inches asunder in boxes, still maintaining sturdy growth; then when they touch each other transferring them to 5-inch pots, affording the plants gentle warmth for a time and much light; eventually removing them to frames, they will, under good cultural attention, be stout and strong by the time the weather is mild enough for planting them in the open, without any material risk of checks to growth ensuing. In the absence of such checks, and in good, deep soil, splendid plants and noble spikes of flowers will be enjoyed towards the end of August and throughout September. If the roots are subsequently dug up and reduced to ashes the plants will have begun and ended their career in one season, or in other words treated as annuals.

For flowering much earlier Hollyhocks must be treated as biennials, which is the easier way. In June sow the seeds thinly in drills a foot apart in the open garden as if sowing Parsnip seed in March. Thin out quickly if necessary to prevent the least crowding. When large enough transplant them 18 inches asunder in an open position, as if they were so many Strawberries, and run the hoe between them frequently. These plants will probably stand the winter, and may be carefully lifted and planted in spring where they are desired to flower, but it is advisable to establish a number in pots in October, eventually plunging these over the rims in ashes in a cold frame for passing the winter. By the exercise of sound judgment in watering and ventilating, also removing decaying parts, these plants will be in the best of condition for planting early in April, or whenever the ground and weather may be suitable for the work being done. They will flower grandly in the summer.

Single Hollyhocks are now represented in so many colours that they are really very beautiful and highly worthy of cultivation in positions where tall flowering plants are required; but doubles are still the favourites, and these may be grown from seed, and used to be grown in thousands of gardens, quite equal to those represented in the photographic illustration kindly furnished by request of the writer (who has had many similar displays), by Messrs. Sutton & Sons of Reading. Hollyhocks have been above alluded to as "old English Flowers." *Althæa rosea*, the originator of our varieties, is said to have come from China in 1573. John Parkinson, in 1629, records that many single and double varieties of Hollyhocks were then called "English Flowers," as "having been cultivated in this country for a very long time." Evidently the old florists sought for and obtained improvements soon after the arrival of the original introduction. Let us have more of these stately flowers in our gardens again.—AN OLD GROWER.

THE UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The annual general meeting will take place at the Caledonian Hotel, Adelphi Terrace, Strand, W.C., on Monday, March 14th, 1898, at 8 P.M. A special general meeting will follow, to take into consideration the advisability of altering the following rules, viz.:—Rule 8.—Alteration on page 9, line 8 from the top, instead of "£20" read "£30." Rule 14.—Page 11, line 10 from the bottom, after the words "lower scale" add the words, "with the privilege of increasing this to." Rule 14.—Page 12, line 14 from the top, the word "successive," after "twenty-six," be struck out. New rule, *re* Convalescent Fund, to follow rule 18, and to be called rule 18A, being headed—"Voluntary Convalescent Fund.—The object of this fund is to give members a change of air during convalescence. The Committee of Management to have power to relieve members of this Society from this voluntary fund as they may deem advisable. All cases must be recommended by a duly qualified medical practitioner."

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—MARCH 8TH.

THE meeting on Tuesday was one of the best early March meetings that have been held in the Drill Hall. Not only was there an extensive display of general plants and flowers, but the quality was very high, while a choicer collection of Orchids has seldom been seen.

FRUIT COMMITTEE.—Present: T. F. Rivers, Esq. (in the chair); with Rev. W. Wilks, and Messrs. G. Bunyard, A. H. Pearson, J. H. Veitch, G. W. Cummins, A. F. Barron, T. J. Saltmarsh, W. Poupart, J. Willard, G. Reynolds, T. Fife, J. Smith, H. Balderson, G. Wythes, W. Bates, W. J. Empson, C. Herrin, A. Dean, and J. Wright.

As will be seen there was a good attendance of members, but their duties were somewhat light.

Mr. Owen Thomas sent magnificent samples of his *Cucumber Every Day*, fruits uniform in shape, dark green, and attractive. They were cut from plants raised since Christmas. The high honour of a first-class certificate was awarded without a dissentient vote.

Mr. G. Wythes sent tubers of his new Artichoke Syon Long Red, tubers nearly a foot long, and 1½ inch in diameter. To be grown and cooked with other varieties at Chiswick. Mr. Wythes also sent fine bundles of Asparagus from outside beds, advanced and blanched with leaves. A cultural commendation was deservedly awarded.

Mr. W. J. Empson, gardener to Mrs. Wingfield, exhibited twenty dishes of well kept Apples, also very large Uvedale's St. Germain Pears. Prominent in the collection was a new local Apple, apparently intermediate between Beauty of Kent and Catshead—no doubt a very serviceable cooking Apple. A silver medal was awarded.

Mr. R. Bullock, gardener to C. P. Scrold, Esq., Taplow Hill, sent eight very good dishes of dessert Apples, for which a bronze medal was awarded.

Messrs. H. Lane & Son sent a large basket of handsome Lane's Prince Albert Apples; and Messrs. James Veitch & Sons, Limited, exhibited a pile of beautifully variegated Kale (vote of thanks).

Prizes for Flavour.—The first prize for a dish of Apples went to Cox's Orange Pippin as shown by Mr. Bullock, gardener to C. P. Scrold, Esq., Taplow Hill. The fruits were in superb condition. Mr. C. J. Salter came second with an excellent dish of Bess Pool. Mr. Maher, gardener to A. Waterhouse, Esq., Yattendon Court, was the only exhibitor of Pears, and received the second prize. The variety was Bergamotte Espere.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. J. Fraser, J. Laing, H. B. May, R. Dean, G. Stevens, W. Howe, J. E. McLeod, T. Peed, J. Jennings, C. J. Salter, H. S. Leonard, W. Bain, J. D. Pawle, J. Fraser (Kew), D. B. Crane, C. Jeffries, T. W. Sanders, C. E. Shea, H. J. Jones, E. Beckett, E. T. Cook, G. Gordon, G. Paul, G. H. Engleheart, H. Turner, C. Blick, J. W. Barr, H. J. Cutbush, and J. Hudson.

The group of Camellias from Messrs. W. Paul & Son, Waltham Cross, which occupied one corner of the hall, was very effective. As is customary with the Waltham Cross plants, they were clean and healthy, and producing shapely flowers of excellent substance. A few of the most effective were Marchioness of Exeter, Madame Cochet, Mathotiana, fimbriata, C. H. Hovey, Double White, conspicua, and Ninfa Egeria. In addition to the plants, there were several boxes of cut blooms. Mr. T. S. Ware, Tottenham, sent a collection of Narcissi in pots, comprising most of the leading earlier flowering varieties. Besides these, there were Chionodoxas, Saxifragas, Primulas, Muscaris, and many others of equal interest. Messrs. Barr & Son, Covent Garden, sent a collection of Hellebores, Chionodoxas, Crocuses, Anemones, and Narcissi, which, if rather small, was very interesting.

Messrs. Peed & Son, Roupell Park Nurseries, sent a group of miscellaneous flowering plants. Clivias in variety were splendidly represented, as were Azaleas, Polyanthus Narcissi, Primulas, Staphylea colchica, and Acacias. All the plants were fresh and well flowered. Mr. C. Turner showed from the Royal Nurseries, Slough, a number of Cyclamen persicum, all the plants being dwarf and profusely flowered. The foliage of some was particularly well marbled. Another group of Cyclamens was contributed by Mr. J. May, Twickenham. Some of the darker varieties were above the average of merit both in size and substance of flower. Messrs. R. Wallace & Co., Colchester, were represented by a number of Irises, including alata, persica, reticulata, orchoides, and others.

Messrs. J. Veitch and Sons, Ltd., Chelsea, staged a small collection of Amaryllis comprising several varieties of merit, such as Miranda, Leonie, Navala, pardinum, and Dryades. The Chelsea firm also sent a number of superbly flowered plants of Cerasus pseudo-Cerasus grown in differing forms, Prunus sinensis, Staphylea colchica, Spiraea confusa, and Corylopsis spicata. A beautiful collection of Ferns came from Messrs. J. Hill & Son, Lower Edmonton. The plants were of all sizes and many kinds. A very bright stand of several varieties of Azalea mollis was arranged by Messrs. R. & G. Cuthbert, Southgate. Two large collections of Cyclamens came respectively from the St. George's Nursery Co., Hanwell, and the Church Road Nursery Co., Hanwell, each being comprised of well-grown plants.

Messrs. W. Balchin & Sons, Hassocks, exhibited several well-grown plants of the fragrant Boronia megastigma and Tetrathecas. Boronias, Oranges, Acacias, Ericas, yellow Callas, Epacris, and Eriostemons came from Messrs. Cutbush & Son, Highgate, and made a diversified and interesting display. Mr. H. B. May, Upper Edmonton, sent a number of plants of Clematis, including many of the popular varieties, and these

attracted a considerable amount of attention. A large group of miscellaneous flowering and foliage plants was exhibited by Messrs. J. Laing and Sons, Forest Hill, and amongst others were noticed Clivias, Orchids in variety, Amaryllis, Crotons, Ferns, Dracenas, Palms, and Caladiums.

Mr. G. Mount, Canterbury, sent three boxes of Roses in superb condition. The blooms were exceptionally rich in colour for the time of the year, while the foliage was remarkable. P. Purnell, Esq., Streatham, sent Narcissi in pots, as well as several little gems that are usually included under the category of Alpines. Mons. L. P. de Langhe-Vervaeke, Brussels, staged a collection of plants of Butterfly Cyclamens; and Mr. A. Chapman, gardener to Captain Holford, Westonbirt, showed fine new Amaryllis. Messrs. Cripps & Son, Tunbridge Wells, sent freely flowered plants of Deutzia Lemoinei, as well as plants of D. parviflora.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); and Messrs. J. O'Brien, de Barri Crawshay, H. M. Pollett, H. Ballantine, N. C. Cookson, H. Little, H. J. Chapman, F. J. Thorne, A. H. Smee, F. Sander, C. Winn, W. H. Young, E. Ashworth, J. Jaques, E. Hill, T. W. Bond, W. H. Prothero, S. Courtauld, T. B. Haywood, and T. Statter.

Messrs. J. Veitch & Sons, Ltd., staged a very beautiful collection of Dendrobiums, including such as crassinode, Euryalis, splendidissimum, Edithiae, Wiganæ, Cybele nobilius, stratus, and others. The same firm also sent Epidendrums, Cymbidiums, Cattleyas, Cypripediums, Trichopilia suavis, and Phalaenopsis John Seden. Messrs. Charlesworth & Co., Heaton, Bradford, staged a bright group of Orchids, comprising Odontoglossums, Phaius, Oncidiums, and Dendrobiums in many forms. Messrs. H. Low & Co., Enfield, sent Cymbidium Devonianum, C. Eburneo-Lowiana, Dendrobium Brymerianum, Odontoglossum crispum, and O. nebulosum pardinum splendens.

Mr. T. W. Bond, gardener to C. L. N. Ingram, Esq., sent some magnificently flowered plants of Dendrobium splendidissimum. Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Reigate, sent Dendrobium Ainsworthi and a Lælio-Cattleya. Mr. J. Lupton, gardener to J. Rutherford, Esq., Blackburn, sent three Odontoglossums, while several other growers sent one or two plants each. A small gold medal was given to Mr. H. Ballantine, gardener to Baron Schröder, Egham, for a plant of Odontoglossum Baroness Schröder, carrying two flowers. It has been twelve years producing these, and attracted an extraordinary amount of attention.

MEDALS.—Floral Committee.—Silver-gilt Flora to Messrs. J. Hill and Son and W. Paul & Son; silver Flora to Messrs. J. May and G. Mount; bronze Flora to the Church Road Nursery Co. and J. Laing & Sons; and silver Banksian to Messrs. P. Purnell, R. & G. Cuthbert, H. B. May, J. Veitch & Sons, and the St. George's Nursery Co. Orchid Committee.—Small gold to Baron Schröder; silver Banksian to Messrs. J. Veitch and Sons, and bronze Banksian to Messrs. H. Low & Co.

CERTIFICATES AND AWARDS OF MERIT.

Amaryllis Princess Ossa (A. Chapman).—A beautiful variety, of which the colour is very bright red with a white central stripe. The flower is shapely, and of good substance (award of merit).

Amaryllis Navala (J. Veitch & Son).—This is a variety of exceptionally good form. The colour is bright orange red (award of merit).

Azalea grandiflora alba (St. George's Nursery Co.).—This is a grand pure white variety. The flowers are of remarkable size and fine form (award of merit).

Cattleya Miranda (J. Veitch & Sons).—A hybrid resulting from a cross between guttata Prinzi and Trianae. The prevailing colour of the sepals and petals is soft rose, but the broad petals are splashed with crimson. The lip is deep velvety crimson (award of merit).

Dendrobium Ainsworthi, Woodhatch variety (C. J. Salter).—This is a decided advance upon the type (award of merit).

Dendrobium Astræa (N. C. Cookson).—On each of the sepals, petals, and lip of this Dendrobe is a large patch of purplish rose, otherwise the colour is creamy white, the throat being yellow with crimson veins (award of merit).

Lælio-Cattleya warnhamensis (G. Duncan).—A lovely bigeneric hybrid. The sepals are bright orange and the petals purplish maroon, the lip being of a similar colour but much richer (award of merit).

Odontoglossum nebulosum pardinum splendens (H. Low & Co.).—This is, in all respects, a glorified form of the well known type (award of merit).

Odontoglossum Wilckeanum Pittæ (H. T. Pitt).—A superb Odontoglossum, and one of the finest varieties of Wilckeanum that has ever been shown (first-class certificate).

Phaius Norman (Charlesworth & Co.).—This is a hybrid from a cross between Sanderianus and tuberculosus. It is a grand flower. The sepals and petals are very delicate rosy buff with deeper rose venations. The fine lip is purplish crimson at the outer portion, the throat being brown with yellow and white markings (first-class certificate).

Phaius Norman rosea (Charlesworth & Co.).—The flowers of this are rather smaller than the preceding, and the colour is brighter throughout (first-class certificate).

Phaius aurea var. (Charlesworth & Co.).—The handsome lip of this is almost identical in colour with P. Norman. The sepals and petals are pale yellowish buff (award of merit).

EARLY BRUSSELS SPROUTS.—A small quantity of seed of a good variety such as Matchless ought now to be sown in a box or on a slight hotbed, and the plants pricked out when forming rough leaves on a bed of soil in a frame where protection can be afforded. If grown as sturdily as possible good plants will be secured for finally planting the end of May.—E.

THE YOUNG GARDENERS' DOMAIN.

TO OUR BOYS.

HAVING obtained permission to address a little homily to my friends, our young gardeners, I am inclined to wonder whether there are not some, or many, of them "who fain would climb but that they fear to fall" into the editorial arms; or, if under the criticism of their compeers, the few who have, by availing themselves of its space, strengthened their wings for higher flights. Perhaps it is so; perhaps not. I read its columns every week, so smart, so concise, so practical; and suppose that in every bothy in the United Kingdom wherever the *Journal of Horticulture* finds its way (and where does it not?) that this part of its pages is never "skipped." How is it then that only some half dozen bright pens are represented in it?

Is the rising generation of gardeners deteriorating? Is it they have nothing to say, or having it they are tongue-tied; or is it that they are ink-bound? Judging from what I see, and hear, and know of matters generally as they exist in bothydom, other deterrents must account for Young Britain's backwardness in coming forward. In comparison with the good (?) old times of, say, thirty years ago young gardeners of to-day in their position, their dress and address, their education, their attainments and privileges generally, especially in this sympathetic desire to give them scope for careful, thoughtful, intelligent practice with the instrument which has often proved an added power to the spade greater than many appreciate.

"Do you read the articles in 'The Young Gardeners' Domain?'" I recently asked a friend. "Yes," he replied; "and what do you think of them?" "Well," the answer was, "if they are really written by lads then I think their young shoulders have very old heads upon them." I do not endorse that verdict, which brings young gardeners down to the level of Doctor Blimber's establishment, "a great hothouse . . . where all the boys blew before their time, whose mental Green Peas, intellectual Asparagus, and mathematical Gooseberries were common at untimely seasons from mere sprouts of bushes;" but to one less keenly interested such an inference was not, perhaps, altogether unwarranted. In many ways boys are what boys were a few decades ago, and probably will remain so for a few decades to come, but as their opportunities are greater, their responsibilities have increased. Do they feel that it is so? Scarcely as much probably as the exigencies of life demand, for they have no past to compare with the present, or only such as history can give them; and the volatile spirit of youth is apt to fly off to the future, losing itself in contemplation of what it would like to be instead of doing what ought to be done now.

Never before has life attained to so high a tension. It is a veritable struggle to get to the front, and the margin for any slack methods woven from loose imagination is daily diminishing. In this sign of the times lays the signal for action. Do young gardeners see it? Are they fully impressed with its significance? It is, at least the desire, it should be our duty to hammer at every bothy door, and stir up the sleepers to vital activity. I have more than one reason for supposing there are such, and that many a lad's notions of how he will become a head gardener are of "such stuff as dreams are made of."

For one instance, if it is not so, why have so few entered this domain? I am asking a question to which I could, myself give a dozen pertinent answers, but not one of which is the shadow of an excuse. One is "afraid." Afraid of what? "Oh, I could never sit long enough to hatch out such practical pieces as appear weekly;" and still another started too strong and finished too weak; another comforts himself another way, so they are on the wrong side of this domain wall, at the wrong time too, and chiefly owing to some bogey of imagination. Let us hope that—

"Some of your griefs you have cured,
And the sharpest you still have survived;
But what torments of pain you endured
From the evils that never arrived."

One could not reasonably expect many to enter by the teacher's door into "The Young Gardeners' Domain," or gain admittance by shouting "words of learned length, and thund'ring sound;" and yet if you will not use the openings which undoubtedly exist then I fear a lock-out and lock-up by the editorial key will deprive bothydom of a privilege undreamt of in my young days. The duties and the circumstances of life, so far as many young gardeners are concerned, are, in a measure, restrictive. They do not allow of much communion with the greater area of the gardening world, hence many a lad leads a somewhat lonely life, shunning, and properly so, a companionship devoid of kindred taste and aims. From this proceeds the danger of a kind of mental cramp, for "Home-keeping youths have ever homely wits."

It was with a knowledge of this, derived from experience, that I welcomed for their sakes this new departure in garden literature, qualified, I admit, by somewhat selfishly envying them, a prerogative denied to my own youth. Denied, I say, for the scribbling itch peculiar to a certain age, and rather common to it too, was pretty effectually scratched out of me by ultra conservatism displayed then. Scratched, or scotched, only, however, not killed, but the scar remains to emphasise the difference 'twixt then and now. The time was not ripe then, presumably, for young men to wield both pen and spade, but it is now, and are they ready?

Taking the proportion of young gardeners to head gardeners as three to one—that is in gardens of sufficient scope for a bothy, and they are numerous—we have, I think, a rather important section of the gardening

fraternity to deal with, and we look upon it not only with expectation as to the future, but reasonably expect its members to feel that they are now a potent power in the vocation, apart from the brute force of numbers and muscular strength. Will those expectations be realised, and do they, I again ask, recognise their responsibility?

It is not a matter of indifference as to the state of gardening and gardeners when we are gone; no liberal-minded man can so regard it. We elders know that they have a hundred advantages that we never had, but we may not ignore or condemn the innumerable snares and delusions which have sprung up since the days when we were boys together, and consequently escaped. I must apologise for bringing the obligations of "heads" and "hands" together, but I cannot disassociate them; indeed, would suggest to all "Old Boys" the desirability of keeping the young fellows in touch with ourselves, and as a means to the end I would ask them to impress upon the plastic mind of youth the advantages of self-education. We are their keepers, and it is our prerogative—I think our duty—to show them the way in which they should go, and bring them in their early days to feel and to know they are important factors in the great gardening fraternity.

A parting word to our boys. You do not yet quite see the opening for you into the "Young Gardeners' Domain." I have left it till the last that you might see it clearer, or them, rather, for there are a hundred openings. Can you not contribute all sorts of notes and gleanings—not exactly mental Green Peas or mathematical Gooseberries—and have you no question to ask, nothing to learn, or something to say about your surroundings? Will you not tell us the girth of "the big Cedar," the weight of "the big bunch of Grapes," what your opinion is of the—whatever you like, what wild flowers you find in your rambles? Young fellows, I am surprised at your diffidence! I had expected better things of you; do expect them, and as I believe in you I doubt not but that any reasons you may have had, or thought you had, will upon a little reflection disappear, to the betterment of yourselves and the gratification of—
AN OLD BOY.

[With about three exceptions, when "old boys" have addressed the young, as in this case, the whole of the communications which have appeared under this heading have been written by young gardeners, and very well written too the majority have been. Some of them, however, do not appear to be largely endowed with the virtue of perseverance; while a few, we are glad to know, are spending most of their spare evening hours in attending educational classes in technical schools. "Shorthand" seems to have a peculiar fascination to young gardeners, but we have no hesitation in saying that a number of them might benefit themselves more by seeking to acquire accuracy in "longhand," or improvement in the essential art of composition.]



HARDY FRUIT GARDEN.

Pruning Filberts and Cob Nuts.—Owing to the necessity of having plenty of catkins or staminate flowers to produce pollen for the fertilisation of pistillate flowers, annual pruning of Filberts and Cob Nuts is deferred until the female buds are fully open. These are known by their tufts of crimson styles protruding from the buds. They are usually situated on the upper parts of young shoots, as well as on spurs, and short twiggy growths. The male flowers hang in long drooping catkins. When fully mature the pollen falls when the catkin is disturbed either by shaking or moved by the slightest wind. After fertilisation has been effected, shoots furnished with catkins may be shortened back. Weakly branches or any that crowd the trees might with advantage be removed before the flowering period, also any superfluous growths tending to crowd and obstruct the necessary light and free circulation of air.

Young Trees.—Suckers or very young trees must be pruned with a view to the production of wood for the formation of the trees. In the case of a sucker with a single shoot shorten it to 18 inches. From the buds which start select six of the strongest, training them at equal distances apart, a hoop secured between them in the centre affording the best means of doing this. The following year prune back each shoot to a length of 4 inches, and allow two growths from each. This will afford a fair number of branches and give a well furnished tree. Pinch the side growths to five leaves. Very strong growths pushing from any part of the trees will have the effect of robbers, and should be closely removed. The free formation of side shoots is best encouraged by shortening the main growths or leaders in winter according to their strength. The weakest may be pruned more closely than those of medium or more strength. Cut the weakest back two-thirds, the strongest one-third.

Removing Suckers.—Young suckers at the base of trees or bushes or at a distance away, if not wanted for planting, should be dug up and destroyed.

Protecting Apricots.—Apricots being the first of stone fruits to open the blossom, means must be taken to duly protect it from inclement weather. Cold dry weather does not materially affect it, but it is liable to receive injury when the weather is wet and boisterous followed by

frost. Even when there is no frost, wet and wind alone are capable of damaging the essential organs of the flowers, hence the necessity of keeping them dry if possible. Blinds of tiffany, frigi domo, and other material drawn down over the trees and supported so as not to touch the flowers will keep the latter dry, but as a mere protective covering to ward off frosts double or treble lengths of fish nets act well. These can be affixed in front of the trees and remain permanently until the need for protective coverings ceases. In the absence of a coping from which the material can be suspended poles may be reared against the walls and the material stretched across them. Although fish netting may be left on permanently other material must be removed or drawn on one side, so that there is no obstruction of light and air on favourable occasions.

Strawberries.—*Planting.*—New beds or quarters of Strawberries may be formed this month, although the plants ought not to be allowed to bear fruit, but instead encouraged to make vigorous growth and plump up bold crowns for the succeeding season. The best plants for present planting are those which were placed in nursery beds in the autumn for the purpose of strengthening. They should lift with good balls of roots and soil. Plant firmly in well dug and manured ground. Young plants having no soil attached to roots, such as those recently procured from the nursery, must be planted with a considerable amount of care. The roots should be kept moist, and when planting spread them out equally on mounds of soil, covering them carefully in the same direction as the roots lie, so as not to turn up the points. This will assist them to more readily take hold of the soil, and become well and quickly established.

Autumn-planted Strawberries.—Should any plants have become loosened it is desirable to make the soil about them firm again, afterwards running the hoe between the plants, cutting down weeds and moving the whole surface to admit air and promote growth. This is best carried out in dry weather.

Established Beds.—The remains of the winter mulching may be raked off, also weeds and withered foliage removed. Dust the soil round the crowns with soot, which will have the effect of destroying slugs lurking there, at the same time benefiting the roots. When the surface has dried and sweetened for a short time, afford another mulching of manure, this time employing rather fresh material. The soluble part of the dressing will gradually be washed into the soil, leaving the strawy portions as a clean rest for the ripening fruit subsequently.

FRUIT FORCING.

Vines.—*Earliest Forced Vines in Pots.*—The canes started last November have the Grapes in the last stages of swelling, and must be adequately supplied with water, liquid manure, and rich surface dressings, while if the roots extend beyond the pots feed them there as well as in the pots. The very early varieties, such as White Frontignan, Foster's Seedling, Black Hamburgh, and Madresfield Court, are well advanced towards ripening, and will only need clean tepid water after the colour is well pronounced. A circulation of warm moderately dry air conduces to the flavour of the fruit, but the Vines must not lack the needful supplies of water to keep the foliage fresh, nor the atmosphere be allowed to become so parched as to invite red spider, and a moderate amount of atmospheric moisture without stagnation is essential to their remaining plump and fresh until cut.

Early House.—Vines started early in December and previously forced will soon have the Grapes stoned, and should have copious supplies of tepid liquid manure. A light mulching of lumpy partially decayed manure may be placed on the border, as the Grapes swell considerably in their later stages, even after colouring commences, and allow a liberal extension of the laterals, as every leaf encourages root action, and that leaf duly exposed to light and air aids the Grapes in swelling and finishing. The Vines started later in the year, and of which the Grapes have been thinned, will need liquid manure applied to inside borders; but surface dressings are more potent in accelerating and keeping surface roots, and a good handful of the advertised fertilisers per square yard makes a wonderful difference in the colour of the foliage, and this means ultimate good colour and finish in the Grapes.

Vines Started at the New Year.—The Vines have made satisfactory progress, starting freely without showing a tendency to twist and twirl in the bunches, which are now in flower. Afford a rather dry atmosphere with a gentle circulation of air, and a temperature of 65° to 70° at night, and 70° to 75° by day artificially, with an advance to 85° from sun heat, maintaining moderate moisture by damping the house two or three times a day in bright weather. Muscats should have a temperature at least 5° higher, and the flowers must be carefully fertilised. Avoid the close stopping system until nearly every part of the trellis is well covered with foliage, then allow no more than there is room for. Do not permit the border to lack moisture, and when the Grapes are set supply liquid manure or top-dressings of fertilisers, washing into the soil moderately.

Succession Houses.—Disbud and secure the growths as they advance, stopping them two joints beyond the bunches where the space is limited; but where there is room allow a greater extension of the shoots before stopping. Remove the laterals from the joints below the fruit except from the two basal leaves, stopping those at the first leaf and to one afterwards as produced. The laterals above the fruit may be allowed to make such growth as can have exposure to light without crowding and then be stopped, keeping them pinched afterwards, as well as those not having room for extension. Remove all superfluous and ill-formed bunches of the free-setting varieties as soon as those that are the most promising for the crop can be selected. Maintain the borders in a proper state of moisture, and secure a genial atmosphere by damping the house well at

closing time, as well as in the morning and evening. A temperature of 60° to 65° at night is suitable after the Vines come into leaf, allowing 65° to 70° on dull days and 75° to 85° with sun and ventilation, taking care to ventilate early, to avoid draughts and to close early.

Vine Eyes.—These having been inserted as advised are now rooted, and should be potted singly, or if placed in small pots they must be shifted into 6-inch as soon as they reach the sides of the smaller, standing them on shelves over the hot-water pipes. Syringe well amongst them, and pinch the laterals at the first leaf, unless the Vines are intended to be planted out this season and not fruited the next, when the laterals may be left entire, but in that case planting must be done before the roots become matted.

Cut-back Vines.—For fruiting in pots next season these Vines will now be fit for shaking out and repotting, or if that has already been done and the roots have reached the sides of the pots, they will need shifting into the fruiting—12-inch pots. If they have been given bottom heat they should be returned to it for a time, 75° to 80° being sufficient, otherwise bottom heat is not necessary, yet the pots are better stood on slates over hot-water pipes than on a cool base. Keep the house close and moderately moist until they become established. Train the canes near the glass, pinching the laterals to one leaf, and thus secure solid growth and plump buds. Use clean pots and efficient drainage. Turfy loam with a fifth of old mortar rubbish answers well for potting, but a pint of bone superphosphate, a quart of soot and two quarts of wood ashes to a barrowload of compost, greatly improves it for the Vines.

THE BEE-KEEPER.

THE WEATHER.

THE exceptionally fine weather experienced during the first two months of the year deserves to be chronicled. In the Midland counties bright sunny days have been the rule, and not, as is often the case, the exception at this season. The rainfall, too, is remarkable, as during January 0.49 inch fell on five days, and February 0.64 inch on eleven days, the total for the two months being 1.13 inch, which amount fell on sixteen days. In the West and South of England, also in Scotland, there were heavy falls of snow in February. This we happily escaped, although the melted snow would add considerably to the moisture in the land, which will eventually be an advantage to bee-keepers in those districts.

But what will be the effect of a mild winter and a light rainfall on bee-keepers? Much will depend on the amount of moisture we have during the early spring months. At the present time the herbage in the fields and by the roadsides is as forward and looks as green as it often does by the first fortnight in May. The two important crops—field Beans and white Clover—are looking well, and, like all other vegetation, are well advanced. If severe frosts come these will certainly suffer, and the flowering season will be retarded. If a heavy downfall of rain come it would do a great amount of good, and then, should the fine weather continue, an early harvest of honey may be expected.

It is often the unforeseen that occurs, and for want of attention at the right time many stocks will doubtless be lost, or so impoverished, owing to a shortness of supplies, that the bees will be unable to take advantage of the early flowers should the favourable weather continue. If the bees are short of stores they will make little headway until the natural supplies are coming in freely, and there is thus a great loss of time, which all bee-keepers should endeavour to guard against.

EXAMINING STOCKS.

The less bees are handled or interfered with at any time the better. During the summer and early autumn it is not necessary to observe the same caution as at this season. All that is required is to find out if sufficient stores remain in the hive. How is this to be done without disturbing the bees? In our apiary we can judge accurately by simply lifting the back of the hive with one hand, and with a little practice anyone may become an adept at judging the weight of the various hives. This is much easier when they are about the same size, and the wood of similar weight and thickness.

There need be no difficulty in this respect, as we have hives constantly in use, which have from ten in the smaller or ordinary hive to upwards of twenty frames in the larger size. If the frames are all of the same size throughout the various colonies it is better, even when one is judging the weight of stores, than when they vary several inches in width or length. Where numerous colonies have to be examined this is a great saving of time. If any doubt exist remove the outside covering from the quilt, and lift the latter from the sides until the frames outside the cluster are bare. By looking down between them the sealed stores (if any) will be visible. If a few square inches are to be seen on a couple of the frames on one side of the cluster all will be well for a few weeks longer. If the stores are

found to be nearly or quite consumed, feeding should not be delayed any longer. The operation must only occupy a few moments.

A mild day for preference should be chosen for this purpose, and it is a good plan to examine all the stocks in the apiary at least once a fortnight from this time onwards until outdoor supplies are coming in freely. We would advise all bee-keepers who have not already tried the plan of lifting the back of the hive to try the weight and prove, if any or what quantity of stores remain in the hive, to do so in the future, and they will doubtless be surprised to see how easily it is done. It has the advantage, too, of being independent of the weather, as well as a great saving of time and labour.

FEEDING BEES.

Although feeding bees is a necessity at this season if their natural stores are consumed, it is not good practice to unduly excite the bees at this early date. The best artificial food for the next few weeks is candy, made as advised in previous notes. This should be placed directly over the brood nest. It may be placed on the top of the frames under the quilt; but as mischief is sometimes done by not placing the quilt and extra covering snugly over the whole, we prefer to cut a hole through the quilt as well as the next cover, turn the flaps back, and place the cake of candy directly over the aperture. The quilt will then remain firmly secured on the frames, and the bees will be warmer in consequence.

The whole should be covered with extra coverings; this will prevent an escape of heat, so important at all seasons, but doubly so during the winter and spring months. The advantage of leaving the flaps on the quilt and covering will be seen on removing the box in which the candy was placed, by the readiness in which they are placed over the aperture, and so confine the bees to their hive.—AN ENGLISH BEE-KEEPER.



All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Tulips not Flowering (E. D.).—The bulbs were, in a sense, "blind," the result of imperfect development of flower buds in embryo, generally attributed to some defect in treatment or the intervention of some parasitic organism. The roots and leaves are healthy, and there is no evidence of mismanagement.

Autumn Grapes (Young Head).—Vines intended to afford Grapes for use in August onward must now be started, and Muscats, with other varieties, to produce Grapes for keeping, should be encouraged to move, as the fruit hangs much better when ripened in August, or early in September, than when the season is more advanced at the ripening period. Vines which have only been recently pruned should be given a little rest before starting them, yet all thin-skinned Grapes, and those taking a long time to grow and ripen, should be started not later than early April, for they require all the sun that can be secured to them, and should be assisted with fire heat all along, as upon thorough ripening depends their keeping sound. Inside borders may be brought into a thorough state of moisture by the application of water at a temperature of 80°, or not less than the mean of the house, and if followed by an application of liquid manure, but not too strong, it will make a considerable difference later on, inciting root action and nourishing the Vines.

Manure (C. Lincoln).—Your sample arrived too late for examination for the purpose of a reply such as may be useful to you in our present issue.

Plants for Germany (Commercial).—You have been correctly informed. In shipping plants for Germany the consignor must make an affidavit before a Commissioner deposing as to the country and locality in which the plants are grown, and make affirmation that there is no phylloxera in the district, then send it to the German Consulate at 46, Finsbury Square, for verification before shipping the goods.

Eucharis Bulb (St. J. A.).—Yes, the "Eucharis bulb has mite," for the most part in the egg state, but the bulb was very dry when received, so the mites may have collapsed if any young were on it. They will certainly endanger the healthy plants, hence those affected ought to be isolated and treated with either Clibran's Eucharis mite killer, following the instructions, or Little's soluble phenyle in the proportion of a wineglassful (2 fluid ounces) to 3 gallons of soft water. Treatment with hot water also answers well, the temperature not being less than 130°, or exceeding 135°; but it has not the after beneficial action of the other articles named.

Early Vegetation in Ireland (J. S. C.).—Your letter arrived one post too late for insertion last week, and this week we have exceptional pressure on our space, so much so that several excellent articles cannot be inserted. We observe "that Clematis montana has been flowering splendidly at Balbriggan, co. Dublin, for a month; that Gooseberry bushes are quite green; also, that Peas sown on January 18th are advancing well up the stakes in a strong and healthy condition." We are pleased to publish notes of interest from Ireland from time to time, but they should reach us not later than Monday for insertion in the current issue. We are obliged by your letter.

Salt (Asparagus).—Our practice in applying salt to Asparagus beds has always been to wait for the appearance of small weeds, and then apply sufficient salt to kill them. About 3 ozs. per square yard will do this, and a few saltings during the season keep the beds clean. Salting during the winter is apt to make the soil too wet. We have found the addition of 2 or 3 ozs. of superphosphate of lime a valuable addition, applied early in March. A very small amount of salt mixed in manure would do no harm in your dry soil, but excess must be guarded against. About 7 lbs. blended in a cartload would be safe. Trenching the land and spreading a good layer of decayed manure, from cowsheds, a foot below the surface would be helpful to the Peas, as would a good layer of manure along the sides of the rows on the approach of dry weather.

Situations (G. G.).—We are pleased to hear that the insertion of your advertisement in the *Journal of Horticulture* was the means of obtaining for you a situation. We hope it will prove a good one, and that both your employer and yourself will be satisfied with the connection. This is the second notification we have received this week of gardeners being successful through the same means. Other excellent men are not equally fortunate, and must find it weary waiting for appointment to vacancies that they could fill so well. These are not the days for gardeners to lightly relinquish situations, but of course the retention of them is at times impossible. Three years ago we had the pleasure of assisting a gardener to obtain a very good charge. He acknowledged this for the first time last week by informing us on a postcard that "he had been very comfortable, but had given notice, as he wanted a change, and no doubt we should soon find him what he wanted." That was all, and enough for a card, but we are bound to inform him that his turn does not come next.

Old Apple Trees (O. F.).—We presume your trees are in the open and not growing against walls. By all means remove those branches that appear so enfeebled as to be unable to produce strong blossom buds, also all interior growths, cutting them smoothly away close to the main stems from which they spring. Only the more healthful and promising branches should remain, and these at such a distance that the leaves of one cannot touch the leaves of another in the summer. The removal of many branches now will probably be followed by numbers of young shoots pushing from the main branches in spring. Do not permit these to grow to any length and then cut them back, but when they are an inch long or so have them rubbed out of their sockets. Perhaps the advice given on page 219 on thinning, cleansing, and improving old fruit trees may be of service. We are pleased you find the *Journal of Horticulture* helpful, and shall gladly give such assistance as we can in any difficulties that you can make clear to us. Healthy thinly disposed young growths if not shortened will become studded with blossom buds.

Double Flowers (Journeyman).—We are pleased to hear you have been attending lectures on gardening. That is what all young men should do who have the opportunity and desire to become competent gardeners. It is possible that you may hear something with which you may not agree, and in this case so much the better, if it set you a thinking and lead to research or inquiry. Lecturers differ, of course, and the best of them are the most ready to admit that they have something to learn. In the present case, however, the lecturer was right in stating that a completely double flower could not produce seed. The instances you cite to the contrary are delusive. Neither a so-called double Carnation, Primula, or Wallflower that produces seed is completely double. It may appear so and be far removed from a single by a multiplication of petals, but lurking among them might have been discovered the essential organs—stamens and stigma; it is not till these are changed into petals that the flower is perfectly double, and when this occurs there are no organs for producing seed. A so-called double Chrysanthemum is an aggregation of a great number of single flowers closely packed together on a common head or capitulum.

Blood Manure (F. S.).—It is necessary to have an earthenware vessel, a wooden one absorbing the acid, and otherwise being unsuitable; also to use the saturated solution of the hydrochloric acid gas, which contains about 42·4 per cent. of real hydrochloric acid, the muriatic acid of commerce containing about 32·6 per cent. Above all allow the blood to become rancid or smell strongly before treating with the acid and iron. For some reason the recipe has not always answered its purpose, and chiefly from those points mentioned not being attended to.

Japanese Irises (J. D. Waugh).—You ask "in what way these Irises differ from others?" We might ask, From what others? for the diversity is great indeed in this beautiful genus of flowers. There are the gorgeous Flag or German Irises, bearded and non-bearded, also the hulbous English and Spanish Irises, with smaller and very beautiful flowers, as



FIG. 50.—IRIS LAEVIGATA.

familiar well marked types. Japanese are Flag Irises, like the German section and non-hulbous; but the flowers are quite different in being much flatter, and many of great size and richness in colouration. Their character is represented in the illustration obligingly furnished by Messrs. Barr & Sons, but the blooms are thrice the size of those in the figure. These Irises only thrive satisfactorily in moist soil, and do not object to some peat in it. They seem to be of a semi-aquatic nature, and are grown near a stream at Long Ditton. Mr. Joseph Chamberlain has a bed devoted to them on his lawn at Highbury, with perforated pipes running through it connected with the water main. In the summer the water is turned on, and the bed maintained as a swamp, but kept drier in winter. It is not a sour bog, as provision is made for conducting the water away as and when required. The plants luxuriate and produce their gorgeous flowers abundantly.

Nitrate of Soda Solution (H. T. H.).—Though a valuable product this is by no means a complete manure, and if used alone over any long period would probably do more harm than good. You do not say for what kinds of plants you intend applying the solution. It is likely to promote leaf growth at the expense of stem substance and floriferousness. You had better proceed experimentally with a quarter ounce to a gallon of water, and even this may not be beneficial to all kinds of plants. You may also bear in mind that nitrate of soda lowers the temperature of water, and that in itself might be prejudicial to some of your plants.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once,

and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Weekly Subscriber*).—All the Crotons of which you send leaves are "varieties" of evidently well grown plants, and can only be named by actual comparison with others. If you deal with a nurseryman who has a large collection he will name them for you. As you will see by the notification above, we only name "species." If you can send us a flowering spray of the other plant, of which we presume you require the name, we will endeavour to supply it.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (D. G.).—A very fine specimen of Beauty of Hants. (O. F. E.).—1 D'Arcy Spice; 2, Braddick's Nonpareil; 3, Scarlet Nonpareil. The Pear is Josephine de Malines.

COVENT GARDEN MARKET.—MARCH 9TH.

FRUIT.

				s. d.	s. d.					s. d.	s. d.					
Apples, $\frac{1}{2}$ sieve	1	6	to	4	0	Grapes, lb....	...	...	2	0	to	3	0
Cobs	21	0	22	6	Lemons, case ...	...	...	...	11	0	14	0
Filberts, 100 lbs.	0	0	0	0		St. Michael's Pines, each	2	6	5	0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz....	1 0	0 0	Parsley, doz. bnchs....	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	6 0	Salsafy, bundle...	1 0	0 0
Coleworts, doz. bnchs.	2 0	4 0	Scorzonera, bundle ...	1 6	0 0
Cucumbers...	0 4	0 8	Seakale, basket...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, lb....	0 6	0 8	Turnips, bunch...	0 3	0 4

PLANTS IN POTS.

PLANTS IN 1915.					PLANTS IN 1915.						
		s. d.	s. d.			s. d.	s. d.			s. d.	s. d.
Arbor Vitæ, var., doz.	...	6	0 to 36	0	Ferns, var., doz.	...	4	0 to 18	0		
Aspidistra, doz.	...	18	0	36	0	Ferns, small, 100	...	4	0	8	0
Aspidistra, specimen	...	5	0	10	6	Ficus elastica, each...	...	1	0	7	0
Azalea, per doz.	...	24	0	36	0	Foliage plants, var., each	...	1	0	5	0
Cineraria, per doz.	...	6	0	10	0	Hyacinths, doz. pots	...	8	0	12	0
Cyclamen, per doz	...	9	0	18	0	Lilium Harrisii, doz....	...	12	0	18	0
Dracæna, var., doz. ...	...	12	0	30	0	Lycopodiums, doz. ...	...	4	0	6	0
Dracæna viridis, doz.	...	9	0	18	0	Marguerite Daisy, doz.	...	6	0	9	0
Erica hyemalis, per doz	...	9	0	15	0	Myrtles, doz. ...	...	6	0	9	0
„ gracilis, per doz.	...	6	0	9	0	Palms, in var., each...	...	1	0	15	0
„ various, per doz.	...	8	0	12	0	„ specimens	...	21	0	63	0
Euonymus, var., doz.	...	6	0	18	0	Pelargoniums, scarlet, doz.	...	4	0	6	0
Evergreens, var., doz.	...	4	0	18	0	Tulips, various, doz. bulbs	...	0	9	1	6

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2	0 to 4	0	Mimosa or Acacia, bunch	
Arum Lilies, 12 blooms ...	2	0	3	(French)	0 9 to 1 0
Asparagus, Fern, bunch...	1	6	4	Narciss, white (French)	
Azalea, dozen sprays ...	0	4	0 8	dozen bunches	2 6 5 0
Bouvardias, bunch	0	6	0 9	Orchids, var, doz. blooms	1 6 12 0
Carnations, 12 blooms ...	1	0	3	Pelargoniums, doz. bnchs.	6 0 9 0
Daffodils, doz. bunches ...	3	0	8	Primroses, doz. bunches...	0 9 1 0
Eucharis, doz.	3	0	5	Roses (indoor), doz....	0 6 1 0
Euphorbia jacquiniæflora,				„ Red, per doz.	3 0 5 0
per bunch	1	0	2	„ Tea, white, dozen ...	1 0 2 0
Gardenias, doz....	4	0	6	„ Yellow, doz. (Perles)	1 6 4 0
Geranium, scarlet, dozen				„ Safrano (English), doz.	1 0 2 0
bunches	4	0	6	„ Pink, dozen	4 0 8 0
Hyacinths (Roman) dozen				Smilax, bunch	1 6 2 0
bunches... ..	4	0	6	Snowdrops, 12 bunches ...	0 9 1 6
Lilac (French), bunch ...	3	0	4	Tuberose, 12 blooms ...	0 9 1 6
Lilium longiflorum, 12 blms	4	0	6	Tulips, dozen blooms ...	0 6 1 0
Lily of the Valley, 12 sprays	0	6	1 3	Violets, dozen bunches ...	0 6 1 0
Maidenbair Fern, dozen				„ Parme (French),	
bunches... ..	4	0	8	bunch	3 0 4 0
Marguerites, doz. bunches	2	0	3	Wallflowers, doz bnchs...	3 0 5 0
Mignonette, doz. bnchs. ...	2	0	4		



A MODEL.

(Continued from page 116.)

WE now come to the consideration of the flock of sheep. How many ewes would the farm of 100 acres carry, and what breed would be most suitable and profitable?

As we have taken for granted that the animals would be required for home consumption, either as fat lambs or as hoggets, one of the Down breeds should certainly be chosen as the best from which to select the breeding ewes. Hampshire Downs are good sheep for the purpose, as they breed early and come early to maturity; but we should not keep a pure flock, because there would not be room for the gimmers during summer without reducing the number of ewes, so it would be found better to buy in ewes after midsummer according to the annual requirements.

We should recommend the use of a Lincoln ram, the cross between Lincoln and Hampshire Down being generally successful in producing lambs which, if they miss going off fat as lamb, will make good, well developed, and heavy sheep for autumn and winter killing, and should always come to profit before they are twelve months old.

The number of ewes to breed from would depend much on the number of fat lambs required. For grazing through the summer the seven acres of Clover would not carry more than twenty ewes and their lambs to do them well; but early fat lambs might be had independently of this Clover by growing an acre of Cabbage instead of an acre of Mangold. If the Cabbage were drilled in April the crop should be ready for consumption in late autumn or early spring. Thirty-five ewes put to the ram in August ought to lamb down in January and February, and if only a dozen of these be fed off with their lambs before May the seven acres of Clover should be enough to see the remainder through the summer. Of course, the Cabbage would be very important in getting the early lambs forward for killing. There would be plenty of well sheltered grass land on which to put the ewes after lambing, and if they had a liberal allowance of cake and Mangold for the first month, then a few Cabbage for a change when the lambs began to eat, there would be little need to stock the seeds until at least the earliest lambs had been sent to the butcher. If the winter were mild, and the earliest Tares very forward—i.e., too forward—the lambs would do well on them for a few days, and whilst the change of food would do them good they would do the Tares no harm.

We should not take the lambs Mangold or Cabbage whilst on the Tares, preferring to put them on the Tares for a day or two at short intervals for a change than to keep them on for any length of time.

The artificial food given to ewes with lambs, and particularly to those with early lambs, should be something suitable for the lambs themselves to eat and digest. To mature rapidly, the animal must eat as well as drink; and, as a rule, what suits the lamb's digestion will also stimulate the milking powers of his dam. Many forms of mixed cake are made suitable for this purpose. Lamb foods, whilst being most valuable in their own sphere, are not the best used for fattening, their greatest use coming in after weaning, when the young animal first really misses its mother's milk, and progress is not so much looked for as the retention of what has hitherto been acquired.

There are several excellent makes of the cake we recommend. They are generally made of a round shape; they should be fairly soft and easily broken, and on analysis should contain as much oil as an average linseed cake. With 24 acres mown every year, there should be no difficulty in keeping the lambs from weaning until they could be got on Turnips; there would not be much more than one lamb for each acre of aftermath, and with a little lamb food and a few Mangolds, if any were left over, they should hold their own at the very least. Cattle would also be run on the fog, and the lambs might either be run along with them over the whole 24 acres, or one field retained on purpose for them; but in the latter case the cattle and lambs would

both benefit from an exchange of pasture at least once during the two months or more during which the lambs would be on the grass.

In this connection lambs are generally best kept without a supply of water, unless the water be a running stream and very pure, but they are safer without any; for at this stage their stomachs are easily upset, and if they are a little feverish and have an unlimited supply of water they are very likely to drink more than their systems can absorb, and bring on pneumonia, followed by rapid decease.

Every effort should be made to get these cross-bred lambs fattened off before February, as we have found them very liable to lameness as the days lengthen and March approaches.

The ewes from October until they lamb down would have plenty of room on the grass land, and with a little hay and malt culm would not require a great many Turnips; if there were very little grass on the meadows of course it would have to be supplemented with Turnips to a moderate extent, but roots should not form more than half the ration of the ewe at any time.

During autumn breeding ewes are no worse for being kept a little low in condition, but during the last eight weeks of pregnancy they must be well fed. We are in the habit, when we notice an ewe looking a little below par about Christmas time, to put her on cut Turnips and cake with the feeding sheep, and it is wonderful to see how good the result invariably is.

WORK ON THE HOME FARM.

Though the frosts have not been severe, they have made the land firmer for carting upon, and we have been glad of the opportunity to get some manure from the yards, also to get sundry heaps of compost placed where they will have the chance to make a grateful return for the care taken of them.

The manure has gone straight on to the land now being prepared for Potatoes; it is practically fresh made, but a portion of the same field will be dressed with a heap of old rotten manure; both portions will have sulphate of ammonia given as a top-dressing, which will give the best result. If all we are now hearing be true with regard to the effect of manure on artificial nitrogen, the old manure should do best, as we are told that fresh manure will send off the nitrogen from nitrate of soda in about fourteen days. It would appear, then, that we had better apply our sulphate elsewhere; but "seeing is believing," and we shall try the experiment and note the result.

We are ridging our land about 26 inches wide; this is quite narrow enough to cart upon without spoiling the ridges. We make our ridges for later varieties 28 or even 30 inches, but this field is to be planted with Elephants, and anywhere between 24 and 26 inches will do for second earlies. The seed is just budding, and we shall get it put in at once, taking care to get it well covered up from frost and birds.

Lambing has hardly commenced here, but we hear of good progress being made here and there. Complaints are made of ewes lambing down slowly; this may be owing to the dry season more than to any large proportion of the animals being barren.

It is very satisfactory to hear that Colonel De-la-Bere's proposed national poultry test has been so well taken up and will be well carried out. We cannot see, however, why there should be any hard and fast rule about feeding; it would have been more instructive to have had a record of the results attained by different systems of feeding as well as a general answer to the question whether egg-production pays.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1898. February and March.		Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun	On Grass	
		inches	deg.	deg.		deg.	deg.	deg.	deg.	inches.	
Sunday	27	29.999	41.4	40.2	S. W.	38.2	48.4	35.8	68.1	30.3	0.113
Monday	28	29.998	37.6	36.2	W.	38.1	47.9	33.0	72.8	28.0	—
Tuesday	1	29.723	44.6	41.9	W.	39.0	52.1	38.1	85.6	33.0	0.052
Wednesday	2	29.675	40.8	37.0	N. W.	38.7	46.9	34.6	84.2	28.9	—
Thursday	3	29.782	35.2	32.6	W.	38.0	46.2	29.7	87.3	25.3	0.324
Friday	4	29.859	35.3	34.9	N.	37.8	44.7	33.1	78.1	30.2	—
Saturday	5	29.864	34.1	33.2	N.	38.0	44.3	32.6	80.4	29.1	—
		29.843	38.4	36.6		38.3	47.2	33.8	79.5	29.3	0.489

27th.—Dull, with frequent slight rain in morning; storm rain with hail at 2 P.M., then generally bright, but rain again at 4.30 P.M.

28th.—Sunny morning; fair afternoon and evening.

1st.—Variable, threatening at times, and rain and hail from 1 to 2.30 P.M., but much bright sun.

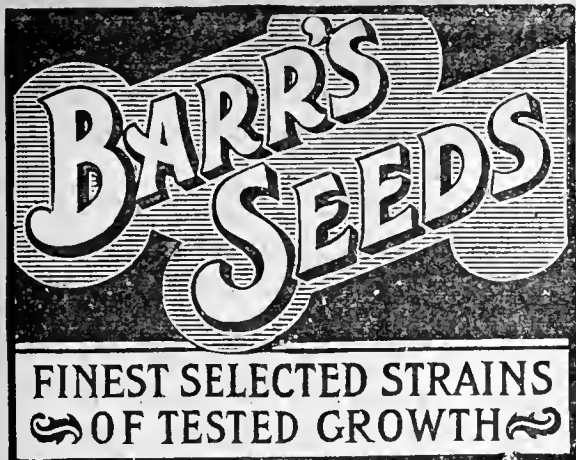
2nd.—Alternate cloud and sunshine; spots of rain at 2 P.M. and 3 P.M.; bright night.

3rd.—Sunny till 3 P.M.; rain and wet snow at 4.45 P.M., and rain or snow from 7.30 P.M. to midnight; the ground white.

4th.—Overcast till 9.30 A.M., then sunny; conical hail at noon and 1.55 P.M.; sunny again from 2.30 P.M.

5th.—Fine, and frequently sunny.

A week with average temperature and rainfall and much bright sunshine.—G. J. SYMONS.



BARR'S CHOICE FLOWER SEEDS.

A FEW SPECIALITIES.

ANTIRRHINUM, BARR'S QUEEN OF THE NORTH, snowy white, fine habit. Per packet, 6d. and 1/-.
 AQUILEGIA, BARR'S LONG-SPURRED, extra selected. Per packet, 2/6.
 ASTER, "PEONY PERFECTION," carefully selected; a beautiful mixture. Per packet, 1/- and 2/6.
 BALSAM, BARR'S CRITERION MIXED. Per pkt., 1/6 & 2/6.
 CELOSIA PLUMOSA, MIXED, a beautiful strain of this graceful annual. Per packet, 6d. and 1/-.
 CINERARIA, BARR'S PRIZE. Per packet, 2/6 and 3/6.
 COCKSCOMB, BARR'S EXHIBITION. Per pkt., 1/- & 1/6.
 COREOPSIS GRANDIFLORA, BARR'S SELECTED STRAIN. Per packet, 1/-.
 DELPHINIUM, BARR'S MAGNIFICENT "LONG DITTON" STRAIN. Per packet, 1/6 and 2/6.
 TREE LUPINS, BARR'S FINE STRAIN. Per packet, 1/-.
 PETUNIA, BARR'S SUPERB GIANT. Per pkt., 2/6 & 3/6.
 POLYANTHUS, BARR'S HIGHLY COLOURED. Per pkt., 2/6.
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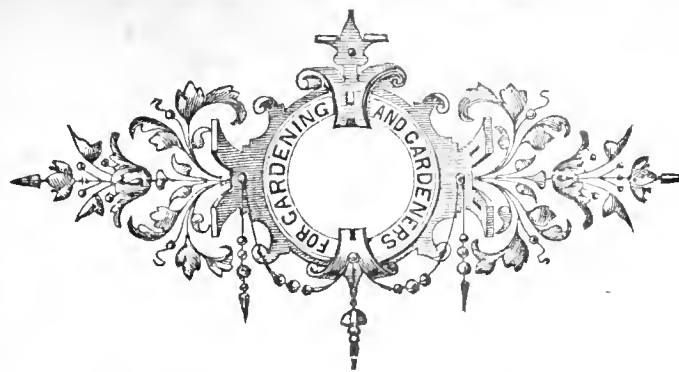
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Journal of Horticulture.

THURSDAY, MARCH 17, 1898.

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THE COMMON IDEAL IN FRUITS AND VEGETABLES.

ONE of the most striking features in the commercial fruit culture and trade of these times is the extent to which, in certain instances, appearances have relegated quality into a consideration of secondary importance. If the chief end of fruit culture be to produce beauty of form and colour instead of quality, of course no objection can be taken to the ideal aspired after. From an æsthetic point of view it is all right. The question, however, may be asked, Is this the most correct and true ideal? Many will be able to corroborate the fact that quality is the first point to the best trained palates and most refined taste.

It is only necessary to send a basket of fine Black Hamburg Grapes and one of Gros Colman to market to find that the general crowd of consumers is satisfied to give a higher place and price for the "Colman." It may be early in October, when it is barely coloured, green round the foot-stalks, and requiring another month to ripen. The flavour may be bordering on nastiness, have a smack of foxiness and earthiness for want of a longer season and more fire heat. The Black Hamburg may be ripe, vinous, toothsome, and jet black; but because it lacks the mere bulk of its rival it is slighted. Is not this something approaching to a vulgar taste?

The public demand in this respect rules the lines on which the market grower works if he is to make his industry pay. Hence the really fine relishable article is elbowed from the market as soon as its larger, unripe, and altogether coarser competitor can be brought into it. Some say of this state of matters, "Where ignorance is bliss, 'tis folly to be wise." This preference is not altogether kept outside the gardens of those who know better, and prefer the less showy to the merely larger and coarser Grapes.

Perhaps the preponderating encouragement offered by horticultural exhibition schedules to mere bulk may be credited with a considerable share in these results, not only in reference to Grapes but to vegetables as well, but specially to

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Grapes. The easily grown, showy, and scarcely second-rate Grapes have met with an extent of encouragement which they do not deserve, as compared with the more difficult but most worthy of culture for the greater part of the year. For the sake of gaining the admiration of—in this matter—the uneducated crowd that attend such exhibitions, but do not appreciate the products by any other standard than mere size and appearance, this may be so far right.

Judges are often sorely puzzled in coming to a conclusion, and in making awards to satisfy themselves when dealing with collections of mixed and unspecified Grapes; and very often when they think they have done right in giving most points to quality instead of size or appearance, they cause dissatisfaction to the exhibitor.

It would do more justice to the respective varieties if the larger collections of six and eight Grapes could each be pitted against the same varieties. Instead of this, one mixed lot is pitted against another mixed lot of diverse kinds, and the correct decision becomes more difficult. Surely such large classes could be arranged the same as for one, two, and three bunches which in the same schedule are confined to one variety. I am quite certain fine Grapes as regards quality suffer injustice from being thus mixed with others. No lover of really fine Grapes would choose size and appearance as against quality and the best finish of the high-class Grapes. Surely more of fine and beautifully finished Black Hamburgs, if treated on their merits, should find their way to our September shows. You, Mr. Editor, must have had an example of large houses full of Black as Sloes Hamburgs in the autumn of the year, and there is no reason why plenty of good ones should not be in evidence till December at any rate.

Take the case of Tomatoes as an illustration of how, in some instances, quality has to take a back seat in order to suit the public taste. Here the case is somewhat reversed. Small ones are preferred up to a certain size, and they must be round and not a wrinkle in their skin. No matter if they have a thick rind instead of a thin skin, and be next to a bagful of seeds and green core, provided they be the orthodox size. The larger ones may be almost seedless and entirely coreless, the flesh mellow and of the finest flavour, yet the market will have none of them. I bought Tomatoes last season for the first time, but did not continue the experiment.

When Excelsior came out many years since I thought more of it than any of the many I had previously tested, having the quality I have indicated in a fine Tomato. For a number of years I selected from it, choosing the fruits with fewest seeds and no cores or open lobes. The result was a selection I have never seen equalled by any of the numberless market sorts I annually tested against it; but the market would not patronise it simply because it was too large, and yet not very large, and some of the fruits came not quite round and smooth. Here appearances carried the day, and I think you in this instance can endorse what I have said of its qualities. I like to see, and have produced, size in many things; but I think quality should be the predominating feature.

I will give one more illustration from Celery. Large, tall, coarse growing Celeries are much run after in preference to dwarfier sorts that are white, firmer in their growth, nutty in flavour, and because of their stature much less laborious to grow. No matter how tall and bulky a Celery may be, its useful part is never in proportion. When sent for use the salad mixer and the cook strip them of their coarse outsides till they are of comparatively small dimensions. If sent up as a cooked dish they have to be stripped to obtain what is white, solid, and useable, till they are little if any larger than the dwarf, compact, and more solid and better flavoured sorts. I remember a sample of large heads being sent to a ducal kitchen, but they were condemned by the *chef* as coarse and soft. More subjects could easily be named to illustrate how in relation to them a false ideal is aspired after, but I will refer to only one more instance.

Strawberries for preserving give an excellent illustration of the sacrifice of quality for size. It is not at all an uncommon practice to grow some large variety for the purpose, and one that produces a preserve that cannot be admired, either from an æsthetic or flavour point

of view. It cannot possibly in these respects be first-rate. Looking at the preserve it might be called almost any name, for no signs of a berry can be recognised in it. They all boil to a pulp. All first-class housekeepers and confectioners with whom I have had to do condemned that state of matters. The Strawberry I have found them to like best, and I quite approve of their decision, is the old Grove End Scarlet. It has almost every good point for this purpose. It is below medium size, of a brilliant red colour, and when picked at the proper stage of ripeness is of good flavour, and when boiled the berries remain whole, and the colour is a bright red. It should be gathered immediately it is fully coloured, and before it gets in any way soft. It has still more good points—it bears abundantly, and the same plants will do so four or five years; and as it gives many pickings in succession it is bad to beat, even for bulk of produce.—D. THOMSON.

[We are in general agreement with our correspondent. It is true we have seen magnificent Black Hamburgs from the end of April till the end of October and later, but the finest late house we can call to mind was at Drumlanrig in 1896. We also know our friend's Tomato very well—its substance, colour, and quality. We know of no Strawberry for preserving equal in all points to the Grove End Scarlet, but we have to be content with small fruits of Vicomtesse Héricart de Thury now. These, preserved with $\frac{1}{2}$ lb. of sugar to 1 lb. of fruit, have retained their shape and lost little of their flavour when gathered but lack the clear brightness of the Grove End Scarlet. We are disposed to think that the cult of size worship, especially in vegetables, is on the decline; but this remark does not apply to Onions. We wonder what our esteemed correspondent thinks of those which approach the size of footballs. He does not object to large Tomatoes, when they are also good.]

NOTES ON INDIAN AZALEAS.

INDIAN Azaleas are among the freest and showiest of our spring-blooming plants. They merit a place in every collection. They do not require a higher temperature at any period of their growth beyond what can be given them in an ordinary greenhouse or vinery. The range of white and beautifully coloured flowers which a large collection of these plants is capable of supplying entitles them, however, to put forth a powerful claim for a separate and exclusive house, seeing that the flowering period may be extended all through the spring months, and as far as June.

Azaleas are raised by grafting on free-growing stocks, such as *Azalea alba*, and by cuttings. The latter method requires that a certain state of the cutting should be secured when inserting, and skilful attention in carrying out the details necessary to obtain success in rooting them. I am acquainted with a good cultivator of Azaleas, who propagates many plants by the cutting system, and thus constantly renews his stock. The average grower, however, wants plants to begin with that are already prepared to flower when a decision is made to grow them. Fortunately he can be supplied quickly and cheaply, good plants, with splendid symmetrical heads full of bloom buds, being obtainable at 2s. 6d. each. Many can be had at less rates, though necessarily smaller plants, while larger may be had at proportionate prices.

Although the material Belgian plants have been grown in is quite different from that we employ for Azaleas, they nevertheless usually do well under our treatment. On the Continent they are grown entirely in leaf soil, and according to their appearance when they arrive here it appears to suit them admirably, but the leaf soil is natural, or unfermented, being quite suitable for the growth and perfection of the Azalea. As we mostly understand leaf soil in this country the leaves are decomposed quickly by fermentation in large heaps. This would not prove good for Azalea cultivation in a general way, but on the Continent it is prepared in a more natural manner.

In this country, however, leaf soil cultivation is out of the question, peat of a turfy fibrous character taking its place. In the North the best peat is considered to be Kent peat, but from what part of Kent it is obtained I cannot say, but wherever it comes from it should be full of vegetable fibres, which hold it compactly together, but can be pulled to pieces by the hand. That which falls into dust, and contains a large proportion of the rhizomes of Ferns, especially the common Bracken (*Pteris aquilina*) is unsuitable for hardwooded plants in pots; it is usually spongy, and soon becomes sour.

Plants obtained direct from nurserymen are ready potted, and need not be disturbed until they have flowered once or twice. Most growers desire to increase the size of their plants. A shift into good soil will encourage free growth, but it must not be overdone, a pot two sizes larger being ample. In potting Azaleas it is important that the pots be clean and firm. Those that are cracked, even slightly, ought not to be used, for this particular reason, that a stronger pot is necessary when potting the Azalea than for most other plants, because the compost must be pressed down hard, and it is only good pots that can withstand the strain put upon them. It is very annoying to reach half-way through the process of potting a particular plant, then the pot snaps in two, and the work has to be repeated. When this has happened a few times to the operator the importance of using sound pots is forced upon him.

A plant intended to be transferred to a larger pot should be in a medium state of moisture, neither too wet nor too dry. If the plant to be potted is small the crocks at the base can be easily removed by picking them out from among the roots. Large plants, when turned out of their pots, are usually very much pot-bound, with the roots entirely enclosing the drainage. The best plan with these, therefore, is to obtain a strong carving knife, cutting through the ball just above the line of drainage, thus detaching the crocks and reducing the height of the ball of roots, making it easier to place in the new pot. The compost specially enjoyed by the Azalea in its younger stages is two-thirds sweet turfy peat pulled to pieces (not chopped) and one-third loam of the same character. Add a fair proportion of white sand and broken charcoal, well incorporating the whole. For large plants peat and loam in equal quantities form the best staple materials, adding also sand and charcoal. The latter acts as a sweetener, and helps to retain porosity with the sand. When mixing it is desirable to have the compost in a healthfully moist condition when used, though care must be taken not to have it too moist on account of the compression required.

Arrange the crocks in the pots very carefully, first placing over the hole or holes large pieces with a slightly concave face, which is placed downwards; over these a layer of equal sized pieces, then one of fine crocks. Perfect drainage is very essential, and it is not the amount used, but the carefulness in arranging that which is employed, which admits of water escaping freely, yet preventing the crocks being choked with soil. Finish the whole by placing a layer of turfy peat free from dust or small particles over the top layer of crocks.

The plant may then be introduced. If it prove to be too low in the pot, introduce some compost, making it firm; if too high, reduce the size of the ball by slicing off the bottom to the desired extent. I would not even hesitate to take off a few slices from the sides if necessary. Use judgment in this, however, as it is inadvisable to destroy a mass of healthy roots if it can be avoided. Sufficient room must be left above the surface of the ball and below the rim of the pot to admit some fresh compost and leave room for watering. Having adjusted the ball of roots properly, proceed to introduce the compost equally all round, ramming each layer down firmly with the blunt end of a potting stick. Fill in more, and treat in the same way until finished. The new compost must be made as firm as the old ball. This is important, because if left looser the water will pass through the new soil without penetrating the old. It is absolutely necessary that the soil is made firm, fine hair-like roots, such as Azaleas have, always needing a firm medium.

After potting stand the plants in a moist, shady temperature, syringing them frequently, but not giving any water for some days. A supply may then be given of the same temperature as the structure in which the plants are growing, giving enough to moisten the whole. No more ought to be required then for some time. The daily syringings will keep the plants moist and encourage the production of new roots. As the growth proceeds and approaches completion more air must be given, and when the foliage is sufficiently hardened and the buds begin to set, the plants should have the coolest and airiest position possible under glass, finally moving to a sheltered place outdoors to fully perfect and ripen the growth. See that newly potted plants do not become saturated with moisture when outdoors. If there is any risk likely in this respect it would be best to keep them in a cool house or frame, or where protection can be afforded during more than usually wet periods. Finally house the plants in September, placing them in a cold house where abundance of air is admitted, so that they are kept completely at rest.

I will next refer to the treatment of established plants in pots, such as have not been repotted for some years. After the flowering period is over in the spring or early summer clip away all the flower stalks without damaging the young growth. Unless it is desired to have the plants in flower earlier another year, no special treatment is necessary to forward the growth which may be made in an ordinary greenhouse, occasionally syringing the plants to aid growth, and to refresh and cleanse them from dust, as well as avoiding attacks of red spider and thrips. When the growth becomes mature, which will be

in July, take the plants outdoors, standing them in a favourable position on a bed of ashes, protecting also from cold rough winds. Watering must be strictly attended to, examining the plants frequently to ascertain their condition, affording an adequate supply when the necessity arises, which sometimes will be every day, at other times several days may elapse without watering.

Before the plants are housed it is desirable that they be examined for thrips, this pest attacking the foliage, chiefly on the under sides, and doing much damage if not checked. This insect abstracts the juices from the leaves, discolouring them, and causing their fall, thus leaving the plants bare and unsightly. Thrips may be destroyed by dipping the plants in a solution of softsoap, 2 or 3 ozs. to the gallon of water. If dipping is not possible owing to the size of the plants, lay them on their side and syringe every part thoroughly.

The best time to commence forcing the Azalea is about the middle of January, choosing the white varieties for the purpose. The semi-doubles are best for cutting. *A. amœna* is one of the best for the earliest forcing, and may be started in December. *Deutsche Perle* is a double early, and blooms with scarcely any forcing if the growth has been made early. *Narcissiflora* is almost a constant bloomer. *Alba sinensis* is also a good forcing variety and one of the oldest. Other good varieties are *A. Borsig*, *Stella*, *Pauline Jardine*, *Beauty of Surrey*, *Admiration*, white, with crimson flakes; *Baco de Rose*, a double flower, and *Flower of the Day*, beautiful clear white, striped with rose. There are numerous other varieties, indeed it is scarcely possible to grow a bad variety of Azalea.—E. D. S.

NAMES AND KINDS OF CARNATIONS.

(Continued from page 162).

THE earliest literature of the Carnation introduces us to a flower already divided into sections. Dodoeus provides engravings of a large single flower, and of a small and a larger double bloom. The flowers were white, light purple, deep red, shades between white and purple, and versicolor varieties. In Steven's and Liabaud's (1586 ed.) "*La Maison Rustique*," the colours are not given; but the no less interesting information is accorded that varieties were numerous, of which the best were broad, tufted, and full, also cultivated with much care. These were called Provence Carnations. A section composed of varieties with smaller flowers, which were less sweet, received less generous treatment, and were called Rosette Carnations. The forerunner of yellow varieties appeared in England shortly previous to the close of the sixteenth century, and a few years later the now all but unknown "*Painted Lady*" made its appearance.

The earliest notice of the Picotee that I have seen is in 1650, when it is described by J. Bauhine as a white flower thickly and evenly spotted with blood red. In 1792, as described by Maddocks; it is still spotted. "The colours," he remarks, "are principally yellow and white spotted; their properties are the same as the other kinds (Carnations), except that the edges of the petals are serrated or jagged, and the colour is dispersed in spots where the others are striped." Phillip Miller states that "Picquettes are spotted (or pounced as they call it)." Though Picquettes were very popular, no change appears to have taken place in the form and quality of the flowers till about the end of last century. However, during the first thirty or forty years of the present century the transformation of the flower was rapid and complete.

We find the evolution illustrated in coloured drawings of the period. Thus in "*The Temple of Flora*" (1803-12) two Picquettes are shown, one with petals roughly marked on the edges, the other much like a fancy Picotee of the present day. A pretty, but rough, edged Picotee appears in the second edition (1810) of "*Maddocks' Florists' Directory*," and in "*The Floricultural Cabinet*" for 1835 a heavy scarlet-edged variety, with deep yellow ground, as well as a light-edged white flower, is printed. Both blooms are in ground colour quite pure, and the marking of the edges clearly defined.

In 1839 a large purple-edged flower named *Dr. Horner* appears, and the various distinctions by which the edged Picotee is known at the present day had then already been made. The second edition of Hogg "*On the Carnation*" (1822) contains a coloured plate of a yellow Picotee with petals full of deep serratures, twisted and splashed on the yellow with many colours. Hogg's plants at this time were imported from the Continent, and this plate is extremely interesting as showing the kind of flower cultivated at this period in Germany, France, and other Continental countries. It is noteworthy that the Picotee has reached us in an unbroken line of descent from its beginnings in the seventeenth century. Yellow grounds appear to have been popular only by fits and starts, and the finest forms of these as well as self-coloured yellows existed from about 1830 to 1840. In Glenny's list for 1844 they are not mentioned at all.

"Painted Ladies," like Picotees, continued for nearly two centuries

without much if any change, when they suddenly disappeared from cultivation. I first saw one about twenty years ago, when a plant named "Parkinson's Painted Lady" came into my hands. It did not live long. Later I had three varieties from the North of Ireland, none of which, however, were worth growing; but from among a number imported from Germany a kind named "Meta" has proved one of the sweetest and best of border Carnations. The "paint" in this variety is red.

The classes in which the greatest interest centres are, however, the flakes and bizarres. It is by no means improbable that the "streaked Gillyvors," which Perdita refused to plant in her garden were the earliest forms of these and possibly Belgian "versicolors." On the Continent their cultivation must have been pursued with great zest, for towards the end of the seventeenth century Gilbert notes that "the nobler sorts which are called Dutch Julyflowers were raised from seeds in the Netherlands, and thence conveyed to us." These on account of the size and conformation of the flowers obtained the names of "Magnum Bonums," of "Monsters," and of "Bursters," the last being the usually applied designation. On the Continent single blooms were grown up to 7 inches across, but in England a bloom measuring 5 inches in diameter was considered worthy alike of commendation and of emulation.

These were classed respectively as Beazards, with white ground, spotted and barred; Flakes, of two colours, regularly striped; and Flames, with a red ground, ribboned with black or purple. In Bursters the blooms were peculiar in being composed of two flowers, the one closely superimposed on the other. In Souvenir de la Malmaison we have a variety that sometimes approaches very closely to these old forms, when strongly grown flowers are occasionally produced provided with a double calyx, and with two distinct blooms in one, and these abnormal types always expand into flowers of an exceptional size.

"Bursters" were allowed to carry only one bloom to each plant, for, as an old writer remarks, "It is not how good, but how big is your Flower;" and "Reason teaches that one Flower will be better fed from the Root than many." Much care was expended on slitting "pods," and strengthening those with vellum or oilcloth which in places had burst beyond bounds. The petals were carefully drawn forward, and the inner calyx manipulated, so that a bloom of "noble proportions" should be the result.—R. P. BROTHERSTON.

(To be continued.)

HARMFUL AND HARMLESS GARDEN MOTHS—17.

SOME of the good old entomologists gave to one group of English moths the funny title of the "rustics." In their habits they are not particularly rural. Several frequent fields, but other species occur about gardens, and may even turn up in the immediate neighbourhood of a town or city. One of the commonest, and also a particularly injurious species of *Noctua*, is a rustic moth, which possesses the name of the rustic shoulderknot, *Apamea basilinea*. The former name seems to have arisen from a fancied resemblance between a mark upon the fore wings and the porter's knot, which was commonly to be seen about London streets in the time of George III., when burdens were usually carried on the shoulders, barrows and trucks being less frequent than they are now. A black elbowed line upon the ochreous ground suggested the Latin name.

Both sexes occur about garden flowers at midsummer and after; the female moths then resort to the corn fields, depositing eggs on the half-ripe ears. The young caterpillars secrete themselves in the lower part of the stalk and feed upon the grains till they harden. Of course they are carried to barns and granaries with the corn, and are sometimes found in such places by thousands. Wandering off, each little caterpillar makes a cocoon somewhere, within which it sleeps till spring arrives. Then they change their habits, and feed on various low plants about fields, gardens or hedgerows, resting on the soil by day. About the end of March or in April we may find them full-fed caterpillars with pale shining heads and stout bodies, which are darkish brown, having some black spots, and a yellow line down the back. Afterwards they enter the earth to assume the chrysalis state.

Several species in the genus *Apamea* live as caterpillars upon grasses or their roots, preferring fields to garden lawns, though the moths visit gardens for sweets if obtainable. One of these is the moth called the common rustic, *A. oclea*, a very variable insect, difficult to make out even to an entomologist. It is some shade of brown, with indications of a darker band; the white spot, which the Latin name indicates, is often wanting on the fore wings. Its caterpillar is putty coloured, and feeds during the spring on grasses, being fond of the species of *Poa*. The larger and handsomer dusky brocade moth (*A. gemina*) has two varieties; one has a couple of conspicuous spots of grey on the dark brown wings, the other has the wings lighter, and the spots are wanting. It occurs throughout our islands in July. The

caterpillar feeds first in autumn, then again from March to May, upon grasses, specially the canary kinds, *Phalaris*, sp., if accessible. Also handsome and singularly marked is *A. ophiogramma*, or the double-lobed; the grey wings are festooned with brown, in which colour is enclosed a double spot. This moth is captured frequently about London suburbs; and, though the caterpillar can live on grasses, it sometimes burrows into the pith of the common garden Flag, and very probably causes the decay of other species of *Iris*. We look for it during spring, and the moth emerges in summer.

A rather abundant June moth is the pale mottled willow, or *Caradrina cubicularis*, a dull coloured insect, which has nothing to do with the Willow that I am aware of, and its scientific name seems to have caused a curious blunder, for the author of a list of moths remarks it was apparently so called because it is found in bedrooms or out-houses. Like some other moths, it may sometimes hide in a room when it wishes to rest, but the name, most likely, arose from the caterpillar's habit of making itself a little apartment in which the winter is passed. The eggs are laid upon cereals and leguminous plants, Wheat, and Peas in fields, being chiefly selected by the females. When the crops are harvested the young caterpillars go with them, and where they are laid up, form these abodes, out of which they emerge in early spring to feed again upon the grain or pulse, if stored. Therefore the species is one that, owing to its destructive habits, we are justified in killing should we have the opportunity.

Of moderate size is the moth called the brown rustic, or *Rusina tenebrosa*, certainly a shady species as the name implies, though the dark wings are of a rather lustrous brown, crossed by two zigzag black lines, and having a few pale spots we do not see unless we examine closely. It is a June moth, not rare in most English counties, and its appearance about gardens is explained by the occasional food of the caterpillar, which lives from August to April, feeding at intervals through the winter. Along fields and waysides we may detect it upon chickweed and knotgrass, but some seasons it is found in gardens upon species of *Viola*. This insect keeps well below its food plants during the day, hiding amid particles of earth and stones, but at night it devours the leaves or gnaws the stalks. In shape it is peculiar, narrowing towards the head and tail, being, therefore, somewhat like a shuttle; it has a velvety skin, puckered along the sides, the body is brown, marked with grey.

We pass on to an important group of moths known in their early stage to all gardeners; but the species generally are puzzling to make out, the colour and markings of many of the moths being much alike; nor, even if reared, do the caterpillars help us to identify, as they often are very similar. Several of them take a place on the black list as insects which damage our crops. The moth, inappropriately called the dark sword grass, or *Agrotis suffusa*, may be seen among flowers in September, then hibernates, flies again, and deposits eggs in April, after refreshing itself with spring sweets. It is some tint of brown, varied with grey spots and lines, the under wings pearly and pinkish. Hatched in May, the caterpillar lives upon a variety of garden plants; it has been taken feeding on the roots or leaves of Lettuce, Spinach, Seakale, Radish, and other vegetables. By day it is unseen, feeding then under the earth; after dusk it emerges to attack the plants above ground. It is a slate coloured caterpillar, rather shining, dotted over with small warts; from each of these rises a hair. The cell in which it becomes a chrysalis is compact, and the interior carefully lined.

The Turnip moth (*A. segetum*) is a dull looking insect; its sober tints and moderate size are not suggestive of mischief, but the caterpillar is a persistent and artful foe, not much behind that of the Cabbage moth in destructiveness. Their season of emergence is June and July, and in going out with a lantern amongst vegetables at night we may detect the females busily engaged in depositing eggs. They are usually placed close to the ground, upon some seedling by preference, which the young caterpillar nibbles persistently and frequently kills.

Turnips may be a favourite article of food with the species, but anything succulent is acceptable. Carrots, Cabbages, and other vegetables are victims to its jaws, nor does it spare some ornamental plants. Newman refers to its visits to the China Aster; he says, "The leaves of a plant will be found to be withering and curling up, examine the stem where it enters the ground, and you see it is nearly decorticated, the circulation of the sap is prevented, and growth stopped. You pull up the plant to find the enemy, but fail; he has wandered many inches away, burrowing in the earth like a mole." This entomologist also remarks upon the utility of certain birds, such as the rook, starling, possibly even the much-abused sparrow, which devour the caterpillar, or take it to their young. After feeding through the summer, it changes the mode of life, and keeps almost entirely under ground, subsisting upon the roots or tubers of plants, and continuing to eat, unless very cold weather sets in, when it remains torpid. About May we find it adult, a stout caterpillar then, small-headed, a horny plate on the second segment, and dotted over with shining spots, in colour grey.—ENTOMOLOGIST.



ODONTOGLOSSUM WILCKEANUM PITTE.

IN our brief report of the meeting of the Royal Horticultural Society, on the 8th inst., we referred to the general excellence of the Orchids shown. Amongst the most conspicuous was *Odontoglossum Wilckeanum Pittæ*, which received a first-class certificate from the Committee. It is one of the handsomest varieties that has ever been seen, and the plant is of peculiarly robust habit. The large flowers, of which there were seventeen on the spike, were of great substance, and the well known colour markings are all much improved upon. It was shown by H. T. Pitt, Esq., Rosslyn, Stamford Hill, and is depicted in the woodcut (fig. 51).

ORCHIDS AT CLEVELEY, ALLERTON, LIVERPOOL.

I HAVE on several occasions mentioned various Orchids seen in flower at Cleveley, but *Lælias* and *Cœlogynes* make the handsomest display, the former being in full beauty in November, and from that time until the wane of the *Odontoglossums*, there will, for more than six months, have been a veritable wealth of beauty. But it is of the present time that I want more especially to speak, as *Cœlogyne cristata* and its varieties have been delighting many visitors.

Nothing surpasses them for beauty in the earlier spring months, and I have seen them on previous occasions, as I thought, almost perfect, but the crowning success in flowering seems to have been reached this year. Mr. Cromwell, Mr. Timmis' esteemed gardener, attributes this chiefly to the thorough ripening of the pseudo-bulbs in the autumn of 1897, the prolonged sunshine having had a marked effect. Every bulb of last year is producing its spray of flowers. A space 20 feet by 9 is taken up with the plants, a background of Palms and Ferns completing a picture of a beauty not easily forgotten. There are in all eleven plants, averaging 3 feet in diameter, each pan having an average number of 100 spikes, the highest number of flowers on a spike being eight, and it is interesting to note that these are found on the *Trentham* and *Chatsworth* varieties. *Maxima* and *Lemoineana* follow with seven, the ordinary varieties having from three to four. This clearly shows that the first two varieties should be sought after by cultivators.

Arranged in the same house are other good and useful Orchids, such as basket of *Dendrobium Ainsworthi* carrying 300 flowers, *D. Leechianum*, *D. albiflorum*, *D. crassinode Barberianum*, the lovely *D. Cassiope*, *D. nobile cœrulescens*, *Cypripediums* in variety, and *Cattleya Trianae*, which all go to swell the list of beauty, form, and colour so noticeable amongst Orchids. *Dendrobium nobile*, *Cymbidium Lowianum* and *C. eburneum*, the latter, often found so difficult to grow, are promising a rich harvest of bloom, and are to follow the *Cœlogynes*. I may, perhaps, be pardoned for mentioning in this column the beautiful corridor. It is just now brilliant with Azaleas, spring bulbs and Roses, whilst handsome bushes of that capital forcing *Rhododendron*, *Madame Wagner*, are especially striking.—R. P. R.

TEN MINUTES' NOTES.

HITHERTO my pen has been prone to touch on wide and various items at random as entering my mind first. I now send a few notes appertaining to fruit and fruit trees as a more united contribution.

BLENDED FRUITS.

Not regarding myself an old fashioned, or, on the other hand, one of your "new fangled" gardeners, I can safely ask, what on earth do we want with such anomalies and mixtures as the following? A "white" (?) Black Currant, a Raspberry-Strawberry combination, a Gooseberry with a smack of Black Currant thrown in as a flavouring, and so on. I see no useful purpose to be served in these eccentric fancies of a few novelty specialists. They are not "made in Germany," for a wonder, but emanate principally from over the "herring pond." If we are to have a "blend" by all means consult a cookery book, and render the cook a service by raising some such fruits as a mixture of Raspberry and Red Currant, Blackberry and Apple, or Rhubarb and Orange, which, by the careful incorporation of their substances in due proportion, would result in universal praise in the kitchen, and, perhaps, save us from unknown jam mixtures now so prevalent.

TRAINING PEAR TREES.

By this I am referring to what should be the mean space between the branches, taking an horizontally trained specimen first. With most varieties every third joint—i.e., from 14 to 15 inches, would seem a fair distance, so as to allow free circulation of light and air amongst the foliage, and the fruit to hang clear of obstruction; but this space would

hardly suffice for some others that assume a more straggling habit of growth, such as, say, *Marie Louise*, or *Beurré Rance*, or with large foliage as *Beurré Diel*; then four bricks space is necessary to insure good results. With fan-trained trees this regularity or uniform space is of course impossible, as at the base an inch or so apart develops into a foot or more at the extreme end of the branches; it is better to err on the side of wider spaces than attempt to crowd the branches in any sense. When training maidens select those side shoots which point straight to the space desired, those on both sides to be evenly balanced and level. The tree looks unsightly with one bough bowed down and the other bent upwards to get them into anything like good shape. It will be almost a necessity to head back the leader every year, selecting as near as possible two side buds to form branches, and one at the apex for a leader. In all probability the side shoots will not be of equal strength; in that case the stronger one will need pinching to induce the weaker one to make headway with the increased supply of sap resulting from that operation.

BRAMLEY'S SEEDLING APPLE.

Without doubt this Apple is one of the best kitchen kinds in cultivation, and I do not know if I should be committing an act of piracy in using its raiser's eulogy on its merits as "the finest Apple on earth." Mr. Merryweather has more than once told me of the yearly increasing sale until the demand for "Bramley's" is enormous. I have frequently

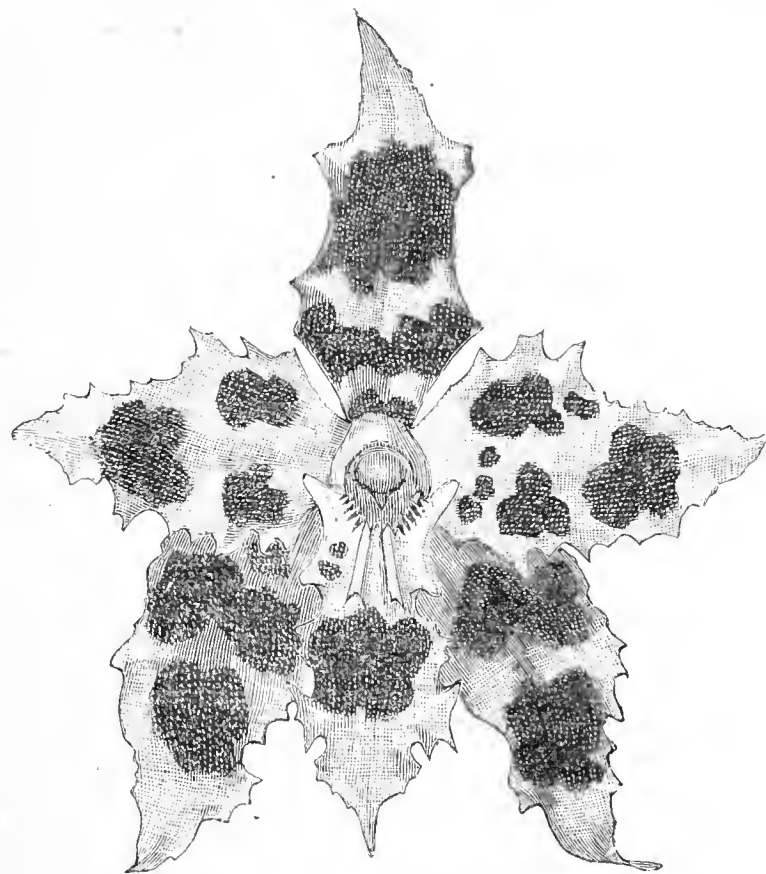


FIG. 51.—ODONTOGLOSSUM WILCKEANUM PITTE.

seen specimens grown by cottagers or small holders weighing 25 and 26 ozs. I know a man of the latter class who generally manages to pay his rent with the sale of his "Bramley's." Some years he has several hundred pecks, which he holds in reserve until the glut of Apples is over, when the lowest price asked is 2s. 6d. per peck. This is cheerfully paid at Christmas time on account of the firmness and quality of the fruit when used in mince meat. A garden without its Bramley's Seedling in Notts would be hard to find, and other counties are fast following suit. One of its characteristics is its late flowering habit, which usually tides it over the May frosts. Sturdy growth enables it to be self-supporting. It is, perhaps, not quite so quick as some varieties in reaching its bearing period; but when once established it recoups all this, and outclasses most of the older kitchen varieties. Beyond procuring young trees it is economy to cut down and graft worthless varieties with this very hardy and serviceable Southwell Apple.

Re FORMER NOTES.

I beg to thank Mr. Geo. Abbey for replying to my queries so fully I find I am in error as regards the *Cineraria* grub, and the larvæ of the Celery fly, which latter I have found dislikes sprinklings of soot on the leaves on dewy mornings. I hope to make a closer observation in due course as regards these pests, and if possible adopt a preventive. With flned garden walls, the last paragraph hits the right nail on the head (page 148) as presenting the only sound principle of "utility with economy." No doubt Apricots were mostly benefited by the old system, on account of the protection necessary by their early flowering. I, however, feel gratified to have the personal experience of Mr. Abbey. It enhances the interest of these old-time appliances from a practical point of view, and not mere conjecture. Only this morning I came across some old volumes of the *Journal*, dating back, in the case of the one I opened casually, to 1868, or thirty years ago. I was pleased to note two names as contributors then that are still to the front—viz., "D., Deal," and Mr. Geo. Abbey. Long may they continue to record their valued experiences for the benefit of many readers of the popular *Journal* of the present day.—GEO. DYKE, *Stubton Gardens, Newark*.



ROSE SHOW FIXTURES IN 1898.

- June 15th (Wednesday).—York.*
 „ 16th (Thursday).—Colchester.
 „ 23rd (Thursday).—Bath (N.R.S.).
 „ 25th (Saturday).—Windsor.
 „ 28th (Tuesday).—Southampton† and Sutton, Westminster (R.H.S.).
 „ 29th (Wednesday).—Canterbury, Croydon, and Richmond (Surrey).
 „ 30th (Thursday).—Eltham, Gloucester, and Norwich.
 July 2nd (Saturday).—Crystal Palace (N.R.S.).
 „ 5th (Tuesday).—Harrow.
 „ 6th (Wednesday).—Farnham, Hanley† and Redhill (Reigate).
 „ 8th (Friday).—Ulverston.
 „ 12th (Tuesday).—Wolverhampton.*
 „ 13th (Wednesday).—Newcastle-on-Tyne.*
 „ 14th (Thursday).—Halifax (N.R.S.), Canterbury (Hospital Fund), and Helensburgh.
 „ 26th (Tuesday).—Tibshelf.

* Shows lasting three days. † Shows lasting two days.

The next list of fixtures will appear early in April. In the meantime I shall be glad to receive the dates of any Rose shows, or other horticultural exhibitions where Roses form a leading feature, for insertion in that list.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

ROSES AT FRANKFORT.

WE are informed that a great exhibition of Roses is to be held at Frankfort during the ensuing season—the largest, its promoters hope, that has ever been held on the Continent. The exhibition is to be opened early in June, and to be continued throughout the season.

SUNRISE.

THIS is the expressive name of a very beautiful new Tea Rose, raised by Mr. A. Piper. Its colour is highly attractive—a combination of bright apricot yellow and metallic red. It is even lovelier in the bud than *Beauté Inconstante*, and opens with much greater facility. The raiser tells me that it is his earliest-flowering Rose; that it is a vigorous and abundant bloomer. It is a splendid companion for *Enchantress* and *Empress Alexandra of Russia*.—DAVID R. WILLIAMSON.

STANDARD ROSES.

ALTHOUGH not nearly so much grown as was the case a couple of decades ago, there are still many persons who prefer their Roses in standard form. Certainly a well grown standard has a better effect upon the lawn than the ordinary dwarf; but how often we see merely a stick with a top like a worn-out broom. Such a plant, I venture to say, is far from an ornament.

If we are to have standard Roses with any show of beauty, or prospect of more than a couple of years' life, it is absolutely necessary to select varieties of very free or of vigorous growth. One cannot reasonably expect a dwarf or indifferent grower to make a good head on a bare stem 3 feet or more from the ground. Even as dwarfs they do not make much headway. How, then, can they derive sufficient sap when it has to be drawn from so comparatively great a distance? Nor is this all. We are constantly cutting off the suckers of the Briar stock, and the weakly growing Rose at the top is not sufficiently active to keep the Briar healthily alive, and hence both rapidly fail.

But when we grow such as *Duke of Edinburgh*, *Madame Gabriel Luizet*, *Gloire de Dijon*, *Rêve d'Or*, and *Crimson Rambler* in this form, it is seldom we fail, simply because such varieties are strong and vigorous enough to command and make use of the sap the Briar would naturally supply. Our free growers are also able to thrive on tall stems, as they are constantly pushing out a succession of new growths, and will not be denied. *La France*, *Viscountess Folkestone*, *Augustine Guinoisseau*, *G. Nabonnand*, *Marie Van Houtte*, *Boule de Neige*, and *Françoise Kruger* may be given as examples.

Do not attempt the weaker growing Roses, such as *Horace Vernet*, *Louis Van Houtte*, *Cleopatra*, *Comtesse de Nadaillac*, and others as standards. I am aware that many do so, in the hope of keeping such grand and heavy blossoms from being soiled through summer showers. If grown on the hedge Briar stems at all, let them be from 12 to 18 inches long.

There are few if any prettier ways of growing *Rêve d'Or*, *Blairi No. 2*, *Madame Bérard*, *Reine Marie Henriette*, *Crimson Rambler*, and others of extra vigour, than as tall standards from 5 to 6 feet. The long rods of the previous summer are arched over, and flower through their entire length, forming a perfect half globe of great beauty. These varieties bloom very freely, and at one time, so that the effect is grand. Our Persian and Austrian Briars are best upon short standards of 2½ to 3 feet, when their slight wooded growths arch over very naturally with the weight of blossom and foliage.—P. S.

VIOLETS IN COLD FRAMES.

IN the Violet we have a flower that is always in great demand, and if the grower has a few cold frames he can readily have flowers from his plants throughout the winter and spring months. As it is a plant that is not difficult to grow, it behoves every gardener to do his best to insure an almost unlimited supply. One often sees frames filled with miserable plants with scarcely a leaf or flower bud on them, a state of things far from satisfactory when we consider how easy it is to have them growing and flowering freely. When the plants are in this condition it is a sure sign that they have been coddled, or were allowed to get dry at the roots during the previous summer and have been eaten up with red spider, causing a wholesale damping of the leaves when the plants were put in the frames.

The Violet being hardy requires no heat to grow it. Where, however, the convenience exists to maintain a temperature of 45° with air on at all times, it greatly assists the flowers to open during severe weather. The winter that is just past has been an exceptional one for the Violets growing in cold frames, as it has scarcely been necessary to cover the frames with mats, and the plants have flowered abundantly.

Now is the time to think about the plants for another season, and I will endeavour, in as clear a way as possible, to give the cultural details as carried out by myself, in the hope that it will benefit others. Where a stock of plants already exists, the beginning or middle of March is a good time to give them a top-dressing of loam and leaf mould, working it well in between the plants. This having been done, give a watering through a coarse rose, as it will settle the mould amongst the crowns, besides washing the leaves and flower buds, and by the middle of April they will have made splendid rooted runners, which, in my opinion, are far better than taking cuttings. The old plants are then lifted, the rooted runners removed with a sharp knife, and planted out on a north or east border which had been previously prepared by having a dressing of leaf mould and road grit dug into it. I plant 9 inches apart in rows a foot asunder, as this allows room to keep the soil stirred between them during the summer. The plants must never be allowed to get dry at the roots, or red spider will very soon make its appearance on the leaves, and once it gets a hold, it is very difficult to eradicate, and besides giving the plants a serious check, it causes the leaves to damp badly when the plants are placed in the frames in the autumn.

At the beginning of September the plants are carefully lifted and placed in frames that have been partly filled with all kinds of garden sweepings, on which about 9 inches of equal parts loam and leaf mould is spread, so as to bring the plants to within about 6 inches of the glass. A thorough watering is then given, the plants are syringed for a week or two, by which time they will be growing freely again. It is the practice of many growers to keep the frames close for a few days after planting; but I prefer a slight syringing to encourage fresh growth, and never put the lights on the frames until severe weather makes it a necessity. The plants should occasionally be carefully looked over, and any leaves showing signs of decay immediately removed, or much harm will be done, especially during bad weather, when the lights have to be kept on. *Marie Louise* I consider far the best Violet for growing in frames. Never allow plants to become dry at the roots, syringe frequently during hot weather, and afford plenty of air.—G. HART.

HEATING WATER IN TANKS.

IN the correspondence columns of the issue for March 3rd I notice that information is given on the above subject. It is one of some importance, as the advisability of watering plants with water of the same temperature as the house is patent, particularly during the winter months.

The greatest difficulty, however, is that of taking the chill off a body of water, and this can be obviated at the time of laying hot-water pipes and making tanks by arranging in such a manner that a pipe flows through or round the inside of the water receptacle. The constant presence of the heated pipe takes the chill off the water, and renders it suitable for applying to plants. The amount of piping in the tank must be governed by its size, for if there is not enough the warming influence will not be sufficient for a large body of water; and if, on the other hand, there is too much heating power, the water will form vapour, and this of course would be detrimental to the plants. This method of warming water is excellent in early vineries and Peach Houses, where a quantity is required for the borders during the opening months of the year; and when the pipes are run through the tank in the first place much trouble is afterwards saved.

There are several drawbacks in the way of heating water in tanks from the pipes. In the first place, if the tank is large it would take a large body of hot water to effect the purpose, and it is obvious that drawing the greater part of the hot water from the pipes means a lowering of the temperature, and this in cold weather is a consideration. Secondly, if the pipes and boiler are not kept constantly flushed rust accumulates rapidly, and discolours the water drawn therefrom. Where such is the case to an advanced degree it would not be to the welfare of tender plants to water with liquid contaminated in such a way. In these and other respects the advantage of heating water in tanks by running pipes through them is seen.—G.

[The reply alluded to was given to a correspondent who desired to have slightly warmed water in the absence of pipes in the tank.]



WEATHER IN LONDON.—The latter half of last week was characterised by the dry, bitterly cold winds that prevailed the whole of the time until Saturday evening, when it was slightly foggy. On Sunday morning the fog remained, and was accompanied by a moderately sharp white frost. The later hours of the day were clear and cold, but with very little wind. Monday was wet until late in the afternoon, when the sun shone brightly for a short time. It was warm throughout the day, and the change from easterly wind continuing. Tuesday was warm and dry until the evening, when rain fell. Wednesday was dull, but warm.

WEATHER IN THE NORTH.—The past week has generally been fine, and there has been no frost except a slight touch on the mornings of the 9th and the 13th. A spring-like feeling has frequently pervaded the air. The afternoon of Sunday was cold, and the evening and night were very wet, but Monday was throughout dry and pleasant, with a rather high S.W. wind. Tuesday morning was very showery, with the thermometer at 43°.—B. D., *S. Perthshire*.

NATIONAL FLORAL SOCIETIES.—We are glad to see from the twenty-first annual report of the "National Auricula and Primula Society" that there was a large accession of new members last year, and that the financial position of the Society, which was sound before, has been consequently strengthened. This year's show is to be held in the Westminster Drill Hall on April 26th. The "National Carnation and Picotee Society" (southern section) has also attained its majority, and is in a highly prosperous condition. The members number 350, including an addition of seventy-eight during the past year, and there is a financial balance in favour of the Society of upwards of £208. The exhibition is to be held at the Crystal Palace on July 20th.

WIMBLEDON HORTICULTURAL SOCIETY — PRESENTATION TO MR. H. THOMSON.—At the twenty-fifth annual meeting of the above Society, held on the 9th inst., a well-deserved mark of esteem was presented to the diligent Secretary, Mr. H. Thomson. The presentation consisted of a nearly life-size portrait of himself, prepared by Messrs. Russell & Son, and was quite life-like in character. It bore the following inscription:—"Presented by the Officers and Committee of the Wimbledon and District Royal Horticultural and Cottage Garden Society, as a mark of esteem and respect and in recognition of twenty-five years' valuable service. March, 1898.—Thomas E. Crocker, President." Mr. Crocker, who is a strong supporter of the Society, the shows of which have of late years been held in his grounds, tendered the gift in felicitous terms, and the recipient's acceptance of it was not less appropriate. Mr. Thomson is a local nurseryman, and his excellently kept grounds must have been admired by many travellers on the London and South-Western Railway between Wimbledon and Surbiton. The next show of the Society is to be held, by kind permission of Col. Mitchell, who was present at the meeting, in the grounds of Cannizaro House, on the confines of Wimbledon Common.

THE CLEAR WAY.—It is not often that gardeners' powers of explanation are brought into question, though "An Old Reader," on page 192, seems to think there is room for improvement in this respect. He is gratified to note that owners of small gardens are becoming enlightened on the difficulties with which gardeners have to contend. It would perhaps be well for gardeners in many cases if owners of large establishments would also acquire that knowledge, as it would tend to alleviate the worries experienced in the endeavours to make all ends meet. I gather that "An Old Reader" wishes to see gardeners masters of language, and would have them endowed with powers of conversation by which they can prove to complaining masters and mistresses why this plant is "leggy," and that one refuses to flower. The logic is doubtless good where ready listeners are to be found to such explanations, but there is a danger of it being extended until the acquirements which your correspondent would encourage are used for the framing of excuses. Genuine explanations on the part of gardeners are often misconstrued, and are accepted only as agitations for additional outlay, and this is unfortunate. On the other hand, the incapable gardener is often a profuse explainer, or rather let us say excuse maker, and in this respect your correspondent touched on a question that has two distinct sides.—H.

ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, March 22nd, in the Drill Hall, James Street, Victoria Street, Westminster, 1 to 5 P.M. A lecture on "Soils" will be given by Mr. J. J. Willis, at 3 o'clock.

HORTICULTURAL CLUB.—The usual monthly dinner and conversation was held on Tuesday, the 8th instant, when the chair was occupied by Mr. Harry J. Veitch. A valuable paper was read by Mr. J. A. Gammie on the Cinchona in India, in the culture of which he had been engaged for many years in the Bengal Presidency. An interesting discussion followed.

NARCISSUS MINOR.—This charming little Daffodil, which is among the earliest of the genus in average years, is at present in full bloom. For the front of the border or rockwork it will be found one of the best, and good clumps please all with their bright yellow trumpets and perianths. It thrives exceedingly well in this district, and nowhere seems happier than in light soil. There is a white variety, but it is rare, and seldom offered in catalogues, and appears to be somewhat tender. Although *N. minor* is scarcer and higher in price than *N. nanus*, it is a better doer in my garden, although this is not usually the case.—S. ARNOTT.

MIDLAND CARNATION AND PICOTEE SOCIETY.—The seventh annual report and balance-sheet of this Society have just reached us, and a perusal of them proves that the condition of affairs is extremely satisfactory in all respects. The 1897 Show, held at Edgbaston, was greatly superior to any of its predecessors, the number of exhibitors having materially increased, while the quality of the blooms was remarkable. We observe that the schedule for the present year's Show comprises rather over fifty classes, amongst which a sum of £185 is distributed. In several of the classes as many as seven prizes are offered, and in these there will not in all probability be many disappointed exhibitors. The Hon. Secretary of this admirably managed Society is Mr. H. Smith, Tenby Street, Birmingham, to whom communications ought to be addressed.

BIRMINGHAM GARDENERS' ASSOCIATION.—"A Chat About Orchids" was the interesting subject so graphically discoursed by Mr. H. A. Burberry at the usually fortnightly meeting on the 7th inst. Mr. W. B. Latham, Botanical Gardens, Edgbaston, was in the chair. The lecturer's remarks were principally confined to the cultivation of those species and varieties adapted for general purposes as will flourish amongst ordinary greenhouse plants. Special reference was made to the feeding of Orchids, the essayist entertaining considerable doubt as to the necessity of applying manure in any form. He was not an advocate for heavy applications of the syringe, but more for "dewings." For the perfect maturation of the pseudo-bulbs of some species a free circulation of air was advised. The much-controverted practice of pruning away the old pseudo-bulbs, especially of *Dendrobium nobile* and its allies, was also an item which he was not antagonistic to, though he would not advise the system, unless in the hands of an expert. An interesting discussion ensued, and a hearty vote of thanks was accorded to Mr. Burberry.

CHESTER PAXTON SOCIETY.—At the usual fortnightly meeting of this Society Mr. G. P. Miln, Hon. Sec., delivered a lecture on "Sir Joseph Paxton." By way of introduction Mr. Miln mentioned that there had never been any complete biography published of Sir Joseph, and it was not without some difficulty that a life history of him had been obtained. This prince of gardeners was described by the lecturer as one of the great men of the century; and his career was minutely traced from the time he became an apprentice-gardener to the period when he was returned member of Parliament for Coventry. His great work at Chatsworth, his valuable contributions to botanical and horticultural literature are well known to gardeners generally. But the crowning effort of his life was undoubtedly the designing of the building in Hyde Park, in which was held the great Industrial Exhibition of 1851, and which was afterwards reconstructed at Sydenham. For this he received the honour of knighthood, a well-earned distinction. The later years of his life were devoted to commercial enterprises of various kinds, and the development of railways, but he never lost that love of gardening which he had so studiously cultivated in early life. In proposing a vote of thanks to the lecturer the President of the Society (Mr. N. F. Barnes) said the members were deeply indebted to Mr. Miln for having got together such an amount of valuable information, which previously was practically unknown to them; and a request was made that the lecture should be published in pamphlet form.

— **HARDY FERNS.**—Moist and shady borders, where flowering plants do not succeed satisfactorily, may be attractively furnished with a few vigorous hardy British Ferns. Tall Ferns suitable are *Lastrea Filix-mas* (Male Fern), *L. dilatata* (Broad Buckler Fern), *L. montana* (Mountain Buckler Fern), *Athyrium Filix-fœmina* (Lady Fern), *Scolopendrium vulgare* (Hart's-tongue), and *Polystichum aculeatum*; while towards the front the dwarfer growers, including *Polypodium phegopteris* (Beech Fern), *P. dryopteris* (Oak Fern), and *Blechnum spicant* (Hard Fern) can be planted.—S.

— **BECKENHAM HORTICULTURAL SOCIETY.**—At the last meeting of this Society a very interesting lecture on "Orchids" was delivered in the Public Hall by Mr. H. Burberry, whose paper treated chiefly the method of cultivation. Afterwards an interesting discussion took place, and the questions put were all readily answered by the essayist. There were some fine specimens of Orchids shown by Mr. Potter's gardener and Mr. H. O. Crowther's gardener, which were greatly admired. At the close a vote of thanks accorded to the lecturer was carried unanimously, and on the proposition of Mr. Murrells thanks were passed to those members who so kindly brought plants.

— **THE HESSLE GARDENERS' SOCIETY.**—A meeting of the members of the above Society was held on Tuesday, March 8th, when Mr. J. T. Barker, Orchid-grower to W. P. Birkenshaw, Esq., West Hill, Hessle, gave a very interesting essay on "Cypripediums and their Culture." He described the first variety introduced into this country and the time of its introduction, also the habitats of the various species which soon followed. He gave the most suitable temperatures for the different varieties, also the composts, and mentioned one or two varieties which required special treatment. Mr. J. P. Leadbetter, when proposing a vote of thanks to the essayist, spoke of the admirable manner in which Mr. Barker had worked for the Society, and it was undoubtedly owing to his diligence and perseverance that it stood in so firm a position. Mr. Blakey showed plants in flower of *Cattleya Trianae*, *C. delicata*, and *C. Mossiae umbrosa*. Mr. J. P. Leadbetter, Tranby Croft Gardens, had some well-flowered plants of *Laehenalia Nelsoni*, *Dendrobium Wardianum*, *Cinerarias*, and *Hippeastrums*. The essayist showed some splendidly flowered plants of *Dendrobium nobile nobilius*, and Mr. Riley some very good *Cinerarias*.—G. W. G.

— **DEVON AND EXETER GARDENERS' ASSOCIATION.**—At the last meeting of this Society a paper on "Variety in the Flower Garden," by Mr. J. W. Moorman, Superintendent of Victoria Park, was read. The essayist, who is a Devonshire man, and was at one time in the gardens at Poltimore Park, expressed the opinion that the main charm in successful flower gardening was to secure as great a variety and succession of plants as was practicable. It should not be, as was too often the case, a mere flash of summer beauty, but a succession of beauties extending, as far as possible, the season of bloom over the greater part of the year, as far as our fickle and changeable climate would permit. It had been a too frequent custom to dig over roughly the flower beds after the summer occupants had become disfigured by frost. A remedy for this could only be accomplished by the introduction of plants of a hardier nature, and whose natural propensities for blooming coincided with the ranges of the different seasons. Thus, at least, two distinct and opposite styles of flowering and foliage were necessary—one embraced a large variety of hardy but charmingly effective early blooming plants, generally known as spring bedding, the other as summer bedding. Fashion governed in the flower garden nearly as much as in dress, and during the years from about 1870 to 1885 carpet bedding was in the zenith of its glory, and though it did not suit all tastes, it found many admirers. He therefore held to the opinion that a few beds might be planted in any garden without incurring much adverse criticism if the work was done neatly and the plants chosen for their decided colouring and lasting propensities. More pot plants were now used than formerly, and where such could be judiciously blended it made a wonderful relief, as well as added to the variety of the whole. After detailing many flowers giving pleasing effects, which were at the command of the gardener at the various seasons of the year, and to the manner in which they should be arranged, Mr. Moorman pointed out that moderation and simplicity were the essential principles that should be applied to the arrangement. Overcrowding must be avoided, and so must the opposite extreme. The main aim and object in variety was to connect seasons, so that while some flowers had done their duty and passed their best, others were only in the zenith of their beauty, and were affording warmth, light, and brightness, while the more precocious kinds were removed from the beds in order that they could be refilled for summer. A vote of thanks was accorded to the writer of the paper, and to Mr. W. Andrews for reading it.

— **PRUNUS CERASIFERA.**—In several places about the gardens at Kew large trees of this are making a fine show, every twig being wreathed with pure white blossoms. In one particular it appears to have an advantage over many other early flowering trees, as frosty nights affect it but slightly, if at all. For grouping in parks or planting at the back of a shrubbery as a protection for choicer plants it is very useful, while for an isolated specimen in a prominent position on the lawn or elsewhere its free-flowering qualities make it welcome. In some seasons good crops of fruit are produced, the fruit when ripe being about 1 inch in diameter, bright red, and sweet. The variety "atro-purpurea," better known as *P. Pissardi*, is a highly valued plant, its worth lying in the combination of its free flowering and ornamental foliage qualities.—W. D.

— **THE BUSY BOTANIST.**—The receipt of a copious work on the "Flora of Berkshire," from the Clarendon Press of Oxford, sets in motion a current of reflections, prominent upon which are some flotsam-and-jetsam-like particles of abashed self-respect in presence of the tremendous application represented by nearly 800 closely printed pages of botanical details, every quire of which might easily represent a month's wanderings, another month's verifying, and a third month's preparation for press. Busy men of the world lose themselves in an awed admiration for the monuments of solitary industry which books like this represent, and will place it on their shelves with a double object—to dip into it in the moments of leisure which every such harassed being hopes for when wealth has lost its charm and politics have worn themselves to shreds, and to find in the sight of it a bracing tonic for work when the demon of idleness asserts itself. The chances of success for the work are not lessened by the fact that it has missed the Jubilee year, and are sensibly increased by the good fortune of a permit for a dedication to her Majesty the Queen. The price is 16s. net, and the diligent author is Mr. G. C. Druce, M.A.

— **WONDERINGS.**—A Northern gardener sends a note for the W.P.B., but as the writer seems rather a "pawky chiel" his little effusion was first handed to the printers. The result is as follows:—"We are wondering where the 'Missus' is. We like her very much, and think about her 'crowning mercies' every time it rains after a spell of dry weather. We always thought the estimable lady hailed from the South, but think it was in her last article she let on that she is in the North. We wonder how far north?—not so far as M. Andrée, we hope! We were glad to see from 'Traveller's' last article that he is now clothed and in his right mind. We fancied he was clean gone. We would like another 'Resting Tour.' When in Edinburgh for a few days last October, in passing the North British Hotel one drizzly morning, we 'couldna' help speerin' to see if Mrs. Scribe was flattening her nose against the window in a brave attempt to see Auld Reekie." [Our imaginative correspondent was doomed to "speer" in vain. He will be glad to hear that the "Missus" is well, and not so very far from his north, but if she should call to see the gardens she might perhaps not "let on" again. A "Traveller," too, would almost feel constrained to make a quiet call if he knew the address, but he knows now, if he did not before, that editors are selfish mortals over addresses. They get all they can, but part with none in response to applications. The "touring" season is not yet, and "pawky chiel" must wait.]

— **THE BEGINNINGS OF PLANTS.**—In one of his recent lectures, Professor Ray Lankester showed that the primal difference between plants and animals was based upon what each was able to eat. The organisms which can only eat substances of no lower chemical elaborateness than starches, sugars, and albumens are said to be holozoic; and all animals belong to this class. Those which can eat oxygen and carbon and nitrogen, and have the power (with the help of chlorophyll and sunlight) of separating oxygen, are called holophytic. But between these two comes the anomalous class—the organisms which have a mouth and eat animal's food, and yet have chlorophyll corpuscles to enable them to get sustenance as the plants get it. These, we say, are saprophytic, and it is among such organisms that we have to search for the point where the animal world and the vegetable kingdom start. There is green plant called the *Englena* which has a mouth, and yet has the chlorophyll corpuscles which would class it as a plant; and there are among the tiny organisms of the "flagellata," or whip swimmers, several we should class as animals, and yet which have the green corpuscles in their minute structures. This is, therefore, one reason for believing that it was among the "flagellata" that the vegetable kingdom first found its origin. Broadly speaking, said the professor, one might say that if in the beginning a group of "flagellata" joined themselves end to end so as to form a thread, they turned into a plant; whereas if they followed more complex courses and joined together in more elaborate structures and households, they became animals.

— **HARDINESS OF CLEMATIS INDIVISA AND SWAINSONIA GALEGIFOLIA.**—Touching the Editor's footnote on page 178 of this Journal, I desire to say it was my intention to write "*Clematis montana*," and not *C. indivisa lobata*, which is a recognised greenhouse climber. A plant under the name of "*Swainsonia galegifolia*," is, however, growing and thriving at the foot of a west wall in Bedfordshire, and receives no protection whatever.—T. P.

— **CLIANTHUS PUNICEUS IN THE ISLE OF WIGHT.**—Mr. Charles Leslie Melville sends us flowering sprays of the New Zealand Glory Pea, gathered from a plant growing in the open air on the verandah of the cottage of Miss Hue, at St. Lawrence, about two miles from Ventnor. Accompanying them was a branch of *Ribes sanguineum*, laden with fully expanded flowers—the first we have seen during the present spring which have developed in the open air.

— **DAFFODIL PRIZES FOR SPRING, 1898.**—Since issuing the schedule of arrangements for 1898 the Royal Horticultural Society has received from Messrs. Barr & Sons of King Street, Covent Garden, the offer of a silver cup for Daffodils, to be competed for at the Society's meeting at the Drill Hall, James Street, Victoria Street, Westminster, on Tuesday, April 12th, open to all amateurs. Notice of entry should be addressed to the Secretary, R.H.S. Office, 117, Victoria Street, S.W., and must be posted on or before Thursday, April 7th. The particulars are:—Collection of cut Daffodils (*Polyanthus* section excluded), each of the three groups—*Magni-coronati*, *Medio-coronati*, and *Parvi-coronati*—being represented, the flowers to be arranged in bottles which will be provided by the R.H. Society. Not less than forty different varieties, and not more than three bottles of any one sort to be staged. Correct naming and elegance of arrangement will be taken into account.

— **STOCKS FOR APPLES.**—I note the remarks on page 205 on this subject, and gather from them that the general practice is to employ only the two quoted—the Paradise and the Crab. As I understand the matter there is a third—namely, the "free" stock, that is largely employed. This is obtained from the pips coming from the cider mills. It is distinct from, and is much more extensively used than the Crab stock. For general culture, especially where the soil is inclined to be heavy, and the trees have ample space in which to grow, my experience is that the free stock is far superior to the Paradise, as better growth is secured, and this means eventually a fuller crop of fruit. If the trees are correctly treated they will bear freely and early on the seedling Apple stock. Whether the trees will make fibrous roots instead of the reverse depends very much on cultural methods. If no encouragement is offered to keep the roots near to the surface it is not to be expected that fibrous roots will be found in quantity, and without these successful crops of fruit cannot be secured.—E. M.

— **EPHING FOREST.**—The Epping Forest Committee of the Corporation have just issued their report upon the work carried out in the forest during the past year. It is stated that a large area of the forest has been judiciously thinned in order to encourage the growth of young and promising trees—namely, Oaks, Beeches, and Hollies—and with a view also to making the beauties of the domain more accessible. The portions thus dealt with include Theydon Coppice, St. Thomas's Quarters, Honey Lane Quarters, Loughton Forest, Whitehouse Plain, Lord's Bushes, and Walthamstow Forest. The Committee also report that they have made an inspection of other portions of the forest where thinning is required, and instructions have been issued for the carrying out of the work. In order to hide from view brick walls and other enclosures, which do not improve the appearance of the forest in places, the planting of small clumps of trees has, says a contemporary, been carried on. Planting of a similar nature has been done on a portion of Wanstead Flats. At the desire of the inhabitants of the locality a portion of Bell Common has been planted with an avenue of trees in commemoration of her Majesty's Jubilee. The digging out of a large piece of swampy land, known as Holloer Pond, has been accomplished at a cost of £1228, to which the Leyton District Council contributed £300 and the Corporation £650. The result is a fine piece of water some 8 acres in extent. A suggestion by the Essex Field Club that the local museum in the forest should be enlarged has received due consideration from the Committee, who report that the cost of the work is estimated at £250. The proposal will be further considered. The sale of thinnings during the year amounted to £643 13s. 9d. The keepers' wages were £1150, and labourers' wages £1085. The Committee recommend that £4000 should be placed to the credit of the Committee to meet the expenses of the coming year.

— **TEA ROSE MADAME LAMBARDE.**—On the 12th inst. I gathered two beautiful flowers of this Rose, one of which I send to you. The plants are growing on the terrace walls near the Castle, and flowers are the result of buds formed late last autumn. The same plant made young shoots 6 inches long with flower buds also in January, but these are not yet expanded.—W. H. DIVERS. [The flower was a richly coloured one, but unfortunately dropped to pieces when taken from the box.]

— **MINT.**—I see on page 196 "*E. D. S.*" speaks of manuring Mint as being beneficial. This is contrary to my experience, and also that of several gardening friends. I find that manuring it causes a kind of fungus, which destroys the whole of the stock. My method of dealing with Mint beds is to top-dress with about 2 inches of good soil, and this has invariably proved successful. I should like to know if any readers have had a similar experience to mine.—H. S.

ROYAL HORTICULTURAL SOCIETY.

MARCH 8TH.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters (in the chair); Rev. W. Wilks, Mr. A. Sutton, and Rev. Prof. Henslow, Hon. Sec.

Phytoptus ribis.—An interesting letter was received from Miss Ormerod giving an account of what is being done experimentally at the Duke of Bedford's fruit farm at Woburn, under the direction of Mr. Spencer Pickering, F.R.S. As to the possibility of obtaining "mite-proof" Black Currants, the only result has been some plants received from Budapest, which she has distributed to the Toddington fruit grounds, to Mr. Speir Newton's farm, Glasgow, and to Woburn. Miss Ormerod has given as exhaustive an account as she could form of the disease in a special appendix to her twenty-first annual report, from the period of its first appearance until the present time. A series of experiments are now being set on foot at Woburn directed to every point which is open for serviceable action, including chemical applications. These will be followed by expert examinations of the contents of the galled buds treated; and with coincident examination of galled buds under precisely similar circumstances, but not treated chemically. These experiments will be found detailed in the appendix, pp. 141-158. A conclusion anticipated is that there should be "a difference in broadscale method of growing."

Scotch Fir, Malformation.—Mr. Veitch sent a curious mass of stunted boughs, the whole resembling a hedgehog, and probably caused originally by a phytoptus or fungus. Dr. Masters observed that short boughs struck from such specimens were used as miniature trees, for rockwork, &c.

Sprouting Broccoli.—A remarkable specimen was received from Mr. W. P. Wright, Willesborough, Ashford, Kent, from the central and much enlarged stem of which a large number of good sized lateral shoots had appeared. It was suggested that if it be capable of being "fixed" it would probably prove a valuable acquisition.

Phytoptus on Hazel.—Mr. G. Gordon sent specimens of this well-known complaint, allied to the Currant mite. The samples were received from Kent, where the Black Currant is badly infested. It was first observed at the locality on the Hazel last year.

Orchid Roots with Fungus.—With reference to the specimen brought to the last meeting, Mr. Murray of The Gardens, Oakwood, Wylam-on-Tyne, writes to say that he is "convinced that it is from no other cause than from the want of air, or, rather, circulation of air, among the plants." In a previous communication to Mr. Douglas he expressed agreement with Mr. Veitch's interpretation, but not quite in the manner he explained, for he observes, "I ventilate the houses day and night with the ventilators, . . . but the air upon the stages, or, rather, above the stages, when the plants are standing close together, travels very slowly, even with ventilators open, in comparison with that around the centre staging, as plants thereon seldom show signs of fungus."

Two and Three-Spathed Arums.—Mrs. Richards of Westridge, near Ryde, forwarded two flowers, one with two spathes, the other with three, both from the same plant. They were very fine instances, and it was reasonable to expect such might prove constant. If so, a permanent form with two or more spathes would be very desirable.

Azaleo-dendron.—A hybrid between an *Azalea mollis* or *sinensis* and a *Rhododendron*, received from Sir Trevor Lawrence, was unanimously awarded a botanical certificate. It was raised by M. Le Prof. Pynaert of Ghent.

Large Ivy Stem.—Prof. Henslow exhibited a section of Ivy, some 10 by 8 inches across. It grew round a tall Holly, about 50 feet in height, at Zeals Rectory, Wilts.

Twin Apple.—A remarkable monstrosity was sent from Mr. Bar-at-Gin, 3, Praed Street. Instead of being the result of the fusion of two flowers, as occurs in Tomatoes, &c.—i.e., a "synanthic" condition, a vertical section revealed the fact that they were the result of a bifurcation of the axis below, the under side of the Apple giving no signs of its being a twin.

Cypress Diseased.—A specimen received from Dr. Church, having the bark split and detached and infested with fungi, was forwarded to Kew for further examination. The following report was received:—"Cupressus dolabrata.—This is a typical example of bark-scorching, the cortex being first killed by exposure to the sun's rays, afterwards splits and forms sun cracks, and finally separates from the wood. The fungus present—*Corticium lacteum*, *Fries*—is simply saprophytic on the dead parts."

FUCHSIAS AS ROOF PLANTS.

MANY years ago, when visiting the famous Chatsworth gardens, I was delighted with the appearance of some large Fuchsias trained to the rafters of one of the plant houses. The numerous shoots which were sent out in all directions were borne down by the weight of the flowers, which hung in charming undulations, regulated by the length of the various shoots. A pretty picture indeed it was, upon which the eyes of the many visitors present lingered with unfeigned pleasure. Since that time I have had many opportunities of growing Fuchsias in similar positions, and have invariably noted the admiration they commanded. The roof of a conservatory, greenhouse, or other cool structures afford ideal elevations upon which to train these popular plants, for in no other positions do their elegant flowers display so fully their graceful beauty.

Admitting, as I believe most readers will, the correctness of the above remarks, it is a trifle strange that, when considering what plants we shall employ for roof ornamentation, the good qualities of the pendulous Fuchsia should often be overlooked. Still it is "never too late to mend," and I trust this note will serve to remind many that they may, with advantage, begin to atone for their past neglect of an old favourite. Those who do so will doubtless have plenty of material at hand with which to make a good start, for Fuchsias, as pot plants, are abundant enough in the majority of gardens. A good vigorous example, in an 8-inch pot, is a capital type of plant to commence operations with, though, of course, failing such, younger ones can quickly be grown on for the purpose. I prefer to plant in borders where such are at disposal, or can be formed, but have often grown them in large pots or tubs for draping roofs or walls.

In many greenhouses borders from 18 inches to 2 feet in width, with a depth of about 18 inches, are already in existence, and such dimensions answer very well, though when they are either a little more or less they serve the purpose equally well, for in some instances I have grown very large plants in borders only a foot in width; it is then simply a matter of feeding highly and paying close attention to details. A few inches of drainage formed of clinkers, broken bricks, or potsherds, to be covered with rough turf, leaves or straw, should be placed in the bottom before the border is filled with soil.

A suitable compost is formed of the following ingredients—good turfy loam three parts, partially decayed manure one part, with a little charcoal, and a 7-inch potful of half-inch bones given to a barrowload of the other ingredients. If the loam is inclined to be heavy some sharp sand should also be added, and if the plants are to be set in pots or tubs, as much leaf soil as decayed manure may with advantage be also incorporated. The reason for making this little distinction is that in the case of a pot plant the leaf soil promotes rapid root action, but is exhausted by the end of the season, then repotting puts matters right again; but when growing in a border we want a given quantity of soil to give up food more slowly, and to remain sweet and fertile for a number of years.

March is a capital month during which to plant. Old plants which have broken freely should be selected, the soil shaken away from the roots, so that they may be spread out evenly in all directions, after dead and damaged points have been cut away. This spreading out of every rootlet, so that its whole surface comes in contact with the soil, has a wonderful effect in securing quick and strong growth. Too deep planting should of course be avoided, the safe rule being to cover the surface roots with about an inch of soil. If a compost similar to that described is used, it may be pressed moderately firm, but does not need a great amount of hard ramming; we then get strong shoots to start with, such as will quickly go to the top of a rafter, and when the allotted space has been covered it is quite easy to suppress undue vigour.

If pots or tubs are to be employed for growing the plants in I like to have them well established in fairly large pots before placing them in their final position. Those that were shaken out and potted in February, will in a few weeks be ready for another shift; then, when they have rooted freely into the new soil, they are ready for the final potting or tubbing. To induce the leaders to grow to the top of the house quickly I usually stop the side when they have made two or three joints, but when once the allotted space is covered no stopping is practised; the plants are simply allowed to grow away at will, but whenever the shoots become crowded some of the weaker ones are removed, and a gap is filled by tying a shoot across it.

A rafter densely clothed from base to summit with Fuchsia shoots, from which depend myriads of drooping flowers of various shades of colour, is a sight not soon forgotten. The growth, however, need not be confined to the rafters alone, for although it is often undesirable to densely shade the whole roof of a conservatory, a light shade is an advantage. If, then, wires are stretched between the rafters from 3 to 4 feet apart, and a shoot taken along each wire, we can manage to drape the roof in a beautiful garb without unduly shading the plants beneath. The pillars which support the roof may also be used to train Fuchsias upon, and indeed there is no reason

why we should not have a Fuchsia house, one in which both walls, roofs, and pillars are entirely draped with these popular flowers.

Anyone who is bold enough to carry out the idea will, I think, be rewarded by a feast of beauty, which will totally eclipse the display obtained in any house where a mixture of creepers have been planted. When autumn comes round, the plants should be kept dry at the roots, just as they are usually treated when grown for ordinary purposes, and at pruning time all side growths ought to be cut in to within one or two eyes of their base; in fact, they may be pruned upon exactly the same system as Vines. When the plants have covered their allotted space, the borders will be packed with roots, and during the growing season liberal treatment must be given in the shape of liquid manure or artificial fertilisers, watered in with abundance of clear water. If this practice is well followed up, and a top-dressing of fresh soil and manure given annually, the plants will give satisfactory results for a quarter of a century.

Strong young varieties should, of course, be selected for the purpose, and the following selection will be found to include many of the best:—

Doubles.—A. D. Neuville; Ballet Girl, white corolla (grand); Burzeward; Champion of the World, sepals coral red, corolla dark purple; Madame Jules Chrétien, and Phenomenal.

Singles.—Aurora Superba; Blushing Bride, white tube and sepals, scarlet-lake corolla; Charming; Dominiana; Madame Thibaut, tube and sepals bright rose, corolla rose margined with white; Olympia, Emperor, Rose of Castile, Lustre, Lord Beaconsfield, and Mrs. Marshall.—H. D.

For some years now one of the most charming summer features of the Chelsea nursery of Messrs. J. Veitch & Sons, Ltd., has been the long span-roofed house with its overhanging Fuchsias. Here, any season, may be seen an example of the system so ably advocated by our correspondent, and all who have noticed it are unanimous in praising its merits. The plants used at Chelsea are usually two years old, and needless to say, only the strong growing varieties are chosen. By the courtesy of Messrs. Veitch & Sons we are enabled to reproduce a photo which was taken when the Fuchsias were at their best, and it will be agreed that the picture is an effective. The varieties represented as in flower are Olympia, The Shah, General Grenfell, Miss Berrage, Mrs. Rundle, Mrs. Todman, and Phenomenal, the latter being the weakest grower, and only suitable for using in conjunction with one of the others. Visitors to Chelsea this summer should make a point of seeing this house, which is situated on the left-hand side of the central walk opposite the large Palm house.

FAIR DEVON.

(Continued from page 141.)

THE region of the "Tors" is one of the most interesting districts of inland Devon, for there we find striking contrasts between charming scenery and the sternly sublime or weird aspects of Nature. There is a peculiar fascination for the observant traveller in all the granitic outcrops of Great Britain, for it seems as we go back in geological time we enter upon a totally different world from that we are familiar with in the less rugged contours of more recent formation. The contemplation of the scenery characteristic of such regions has an invigorating effect upon a healthy mind, just as cold water braces the muscles of the body, while warm water relaxes them. A change of scene is beneficial to all, and gardeners, like others, may so assiduously devote themselves to their duties that their minds become too cramped or narrowed in their range of ideas. When business can be combined with the mental relief sought it is an advantage frequently from a pecuniary point of view, but there are times when such considerations must be placed upon one side and health becomes of the first importance.

Holidays pure and simple must be indulged in at times, though I confess to a natural disinclination for the merely idle rest, needful as it may be, and I have for many years been fortunately able to combine some work with the recreative and instructive change afforded by journeys throughout our islands. If, however, I had to choose a locality for a holiday apart from business, one that would certainly have prominent claims upon me is the region of the Tors, the vast expanse of Dartmoor Forest, which occupies so large an area of central Devonshire. There the pedestrian has ample space for his wanderings, and if he be a naturalist he can find abundance to engage his attention in the 200 square miles of wild moorland, over the greater part of which he is free to roam unchecked. This extraordinary expanse, which extends nearly north and south for about twenty-five miles, varying in breadth from ten to twelve miles or more at some points, is a vast outcrop of granite barely covered at the more exposed places with sufficient soil for grass, in others forming a peaty mass of a boggy nature. But wherever the rock has been sufficiently worn down a

moderate turf is found that provides excellent fodder for numbers of sheep that are annually turned out there, as well as for the sturdy Dartmoor ponies which may be seen scampering about in many parts.

The "forest" will be sought in vain unless the traveller journeys to Wistman's Wood in the neighbourhood of Two Bridges, where a few peculiar stunted Oaks appear to be the only vestige of the ancient forest that at one time covered a great portion of the "moor." Now it is singularly bare of any vegetation approaching the size of a tree, though the botanist who is interested in Ferns, Mosses, and other minute forms can find plenty to study. In all directions the most

fine day is chosen for the journey, and the traveller is favoured with fair weather until he reach his destination, the experience will be a most enjoyable one, for when the warm, moist valleys are left behind, and an elevation of 1000 feet or so is reached, the air becomes most invigorating, notwithstanding the frequent rains. Extensive and delightfully varied prospects are obtained on the way: the huge, frowning tors only serve as a foil to the brightness of the landscape, and the wildness of the moor is pleasingly picturesque. But such is not often the fortune of the visitor, especially in late autumn; and there is another side to the picture. In one of my journeys it was brilliantly sunny in Tavistock at starting, and this continued far up into Tor-land, when suddenly a strong cold wind brought up a dense mist,

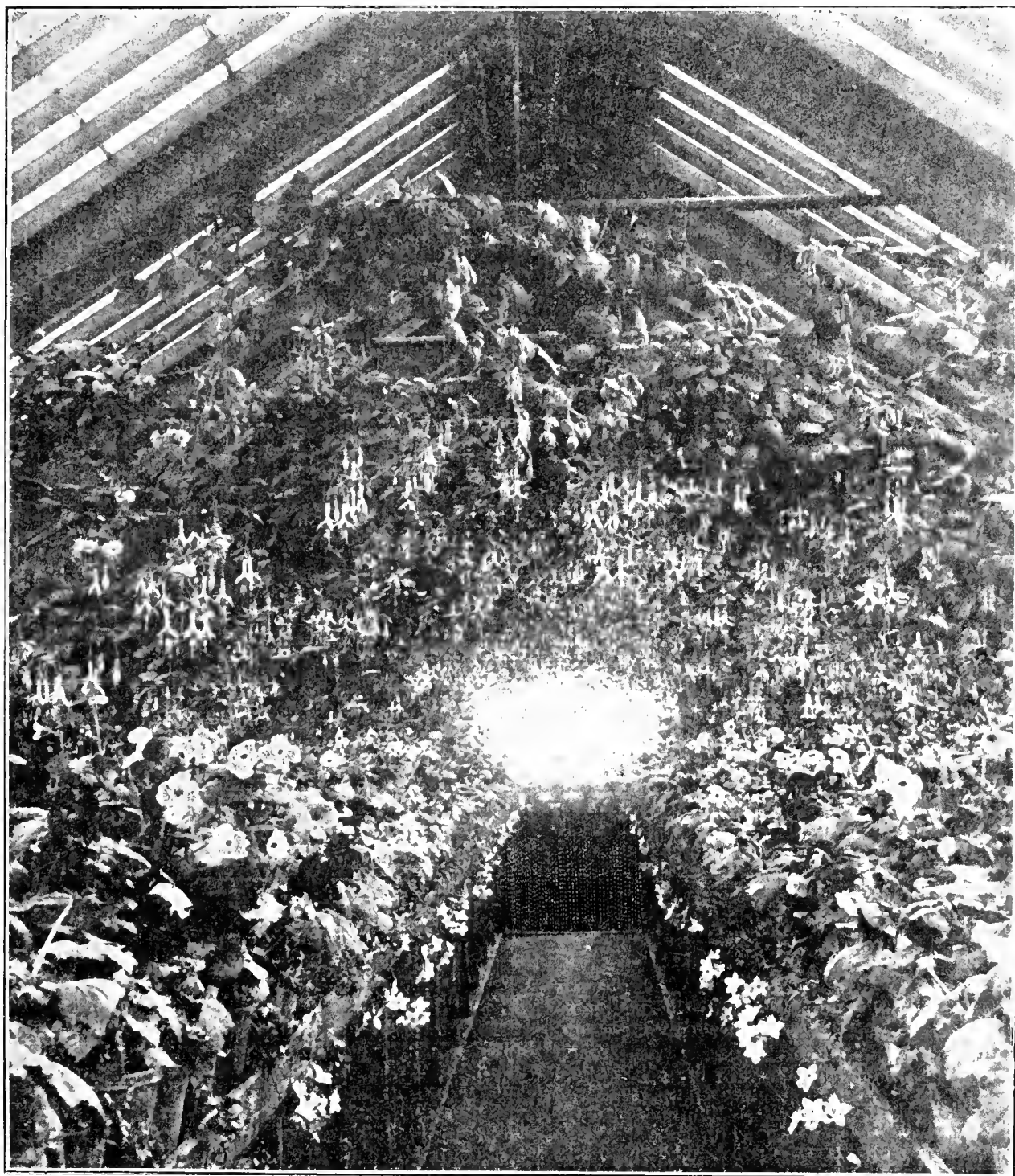


Photo by

FIG. 52.—FUCHSIAS AT CHELSEA.

E. Braun, 435, Fulham Rd.

prominent objects are the towering bare peaks that assume grotesque or forbidding forms, and which are designated "tors," variously translated as meaning a "heap of stones" or a "tower." Rising high above the level of the moor they have a most weird effect when the observer is near them, and they are visible at great distances in the surrounding country when the atmosphere is clear. Some of the most notable peaks are Crockern Tor, Feather Tor, Cock's Tor, Sheep's Tor, Great Mis Tor, Vixen Tor, and Brentor, culminating in Yes Tor, which reaches an elevation of 2050 feet; but the list might be extended to far greater length, including dozens of other tors of varied proportion and heights.

If the visitor is approaching Dartmoor by road Tavistock is a good point to start from, as the ascent is comparatively easy, and the distance only about eight miles to Princetown, or, as the local residents tell one, it is "eight miles there and four miles back." If a

and the whole aspect was altered. We were literally amongst the clouds, and to see the masses of mist drifting across the moor, sometimes partly and at others wholly shrouding the tors, imparted a wildness and a dreariness that was most impressive; it only wanted a driving snowstorm to complete the picture. The wanderer on foot who has departed from the roads or known tracks has a sorry prospect if he be caught in such a fog alone and far from a resting place, for he may spend many a weary hour in seeking a refuge.

There is another means of reaching Princetown, and that is by train from Yelverton, a junction on the Great Western line from Tavistock to Plymouth. The Dartmoor railway is a remarkable and interesting piece of engineering, the line rising at a very steep gradient, something like one in sixty-five; and as the passenger commands some most extensive and beautiful views on the way, it is

a favourite route with numbers of visitors who do not care to face the journey by road.

Princetown is small, but it occupies a remarkable situation nearly in the centre of Dartmoor, and its elevation above sea level being something like 1400 feet, it enjoys the distinction of being one of the highest towns in Great Britain. Except for its convenience as a centre for visitors to Dartmoor, it is not a very enticing place, for it is inseparable from the great prison for convicts, which darkens the town with some of the worst shadows of human life. But there is a bright side even to this, for it is astonishing to see the piles of substantial and even stately structures which have been erected by convict labour. With all the cold rigid sternness characterising such a place, there is still the evidence that the men are being taught to do useful work, which may in some cases possibly enable them to become of service in the land when they are released from the hand of the law. In one department particularly, which was the special object of my visit—the farm—land cultivation is carried out on a scale that could be attempted in few places where labour is scarce and expensive. Something like 2000 acres have been reclaimed from the wild district round the prison, and a large part of this has been brought under spade cultivation, with astonishing results in crops and returns. It is an uncommon sight to witness 200 men digging with spades on one piece of ground, yet this is what I saw; and the thought arose in my mind what a wage's bill I should have to meet at the end of a week if I had such an army to pay at the current local rates of 1s. 6d. per square pole. Still it is a great object lesson, for certainly few soils could be so unpromising as that on Dartmoor, yet with abundant labour and the free use of all the refuse from the prison a marvellous transformation has been effected; certainly the desert has been made to smile. No more healthful occupation could be found for the men, and the whole farm, including the dairy and stock departments, are highly creditable to the officials.

Readers may observe there is not much "gardening" in these notes, but the Editor says that a change is good occasionally even in the contents of our much valued Journal; but to compensate for the horticultural shortcomings of this letter the next shall be all gardening to conclude.—VIATOR.

(To be concluded.)

ARTIFICIAL AND FARMYARD MANURES.

THE concurrence of opinion resulting from experience concerning manures is too well established to be set aside by the assumption that their action is empirical, and that it can in any way be simply a matter of faith, or that they have no useful place in the economics of the cultivation of the soil. Such simple faith would apply, as a matter of fact, quite as much to farmyard manure as to artificials, in so far as actual plant food is provided, which even stable manure does not give unaided, as we are again reminded on page 193, in the following words, by Mr. W. Dyke:—"The organic nitrogen in farmyard manure is during decay converted into ammonia. The ammonia is then changed by certain nitrifying organisms into nitric acid. The acid when formed in the soil unites with lime and forms nitrate of lime, and it is from this source that plants obtain their chief supply of nitrogen." The very pertinent question arises, "Is lime present to effect the valuable conversion, without which even stable dung would be mainly only a mechanical agent instead of a plant food?"

Referring now to experiences (such as on page 186), they do not appear to be founded on a complete set of scientific experiments, but rather on a series of rule-of-thumb methods. The presence of a dark horse is also apparent on page 200 in a few lines on "Artificial Manures," where it is stated, "The same kinds of artificial manures do not produce the same effects in differing soils. Those who use them can only relate their experience." Exactly so! The article proceeds, "If one person find them of service he has good reason to speak in their favour; if another use them carefully with no practical results, he can only say what is true. His land and crops did not need them." Precisely so! The labour and expense were wasted. The dark horse ever returns.

The simultaneous appearance of the articles referred to in your Journal furnishes the opportunity for drawing attention to the omission of an important factor, so far as any positive references are concerned. There is substantial merit in the articles cited and referred to by me, and the subject deserves all the solicitude it can engross at the hands of the writers, but only so far as they go. The dark horse is unheeded; an important link is missing in the operations alluded to. As a step in the right direction I find much written about the importance justifiably attached to guarantees of the strength of fertilisers: but it is a strangely incomplete proceeding when exact science is aimed at, that the predominant partner in the whole affair, the chemical constituents of the soil, seem to remain unobserved, or, to be more exact, unmentioned. Are they treated as a negligible quantity all round? and is the result of elaborate mixtures on chemical lines thus usually a matter of chance as to outcome in part, if not an entire loss occasionally, except always where lengthy direct experiments have taught the lesson to a man growing old over its accomplishment?

The reduced charges for analysis of the soil render the expense in proportion a trivial one. It may be useful to direct attention, as stated on page 20 and page 26 of the R.H.S. Journal (Arrangements for 1898), that at the reduced charge of 10s. a partial analysis of the soil will be made by Dr. Voelcker for Fellows of the R.H.S., including determination of clay, sand, organic matter, and carbonate of lime. The charge for a complete analysis, including plant foods, is £3.

It is the proportion of lime to be ascertained so cheaply to which I wish to direct attention, as this useful material is lost sight of in the absence of an analysis of the soil. Yet science tells us that lime turns dormant plant foods into available ones, and destroys the bad qualities of substances that prejudice growth, and acts as an antidote to sour soil. It also decomposes organic matter into plant food, and has a physical influence besides. It even improves light soils by rendering them less porous. Its application thus becomes a general corrective, where proved deficient by analysis of the soil, naturally or through absorption by crops; and I feel convinced that in many cases of the use of sundry manures lime would accomplish the main part necessary much more cheaply, and would save heavy amounts of indiscriminate outlay on manures. The simple analysis of every variety of soil on any estate would save absolutely from groping in the dark, a condition of things that appears common.

It is interesting to read in this connection also the following, from a report in the "Standard" of Professor Warington's lecture before the Newcastle Farmers' Club, on the subject of compensation for the use of foods and manures:—"Mr. Warington shows that operations which constitute improvements on some soils are really deteriorating on others, and that the residue of fertility left by manures varies greatly with the character of the soil."

This statement leaves also the gist of what I have at heart, that the soil should be analysed before manuring. Owners should be guided in the selection of manures by the result of analysis of the soil.

When all is known that can be by systematic analysis of the soil, and the manures are determined in accordance therewith for the respective crops, direct experiments should be made to complete the evidence by proof supplied by various crops as would be propitiated in accordance with knowledge that science supplies so abundantly. It would seem a small matter for large cultivators of leading crops to dedicate every year some corner of any fields of sufficient extent, and of homogeneous soil, to experiment on one or more different crops, technically known as deriving assistance from existing conditions, and thus have proof supplied as to which crops, in regular rotation or otherwise, would deserve preferential treatment on any particular plot of land.

Nor are far reaching effects of a correct interpretation of all the phenomena alluded to absent, for a crop growing with fair vigour, from attention generally bestowed, will possibly escape insects, pests, and other drawbacks from which a weakly crop would certainly suffer soonest, such crops which would, for instance, grow on land that has deteriorated on Professor Warington's principles.

Although the subject of this article is suggested by correspondence in a horticultural journal, the wider range of its application to the cultivation of the soil on large agricultural estates is equally manifest, and is alluded to in various ways. It is only in reference to the actual analysis of the soil that I wish to suggest possible opportunities nearer home in the various centres of education created under the management of County Councils or agricultural and horticultural societies, which might be preferred for convenience to the address given by me.

I should not wonder if in gradually increasing attention to the niceties of these problems may be discovered an unsuspected source for improvement, unsuspected by the many, for the cultivation of the soil and its results, with a gradual suppression of importations.—H. H. R., *Forest Hill*.

[This article was one of others in type for our last issue, but unavoidably crowded out.]

TRITOMA SAUNDERSI.

I AM fully persuaded Tritomas are not nearly so much grown as their merits deserve. When seen in groups or large masses they make a wonderful and effective display, and coming into flower at a time when most other things are on the wane, makes them doubly welcome.

Last autumn, on the 9th of October, I saw a plant of *T. Saundersi* in the garden of W. T. Hindmarsh, Esq., Alnbank, near Alnwick, which I am not likely soon to forget. Mr. Hindmarsh is an excellent gardener, and, from the position this plant occupied, evidently understands the requirements of Tritomas. It was growing in the middle of a large and beautiful bed of tuberous-rooted Begonias. The centre of the bed is considerably elevated above the ground level, which not only gives a greater amount of heat in the growing season, but keeps the plant drier at the roots during winter. The plant was 4½ feet high, and nearly 3 feet in diameter, and carried thirty-four splendid spikes, a few of which were at their best, and measured 1 foot in length, of a uniform shape, and of a bright and cheerful colour.

No Tritoma I have seen produces such a charming appearance, and all who do not possess this variety should make a note of it. There is an idea that Tritomas are rather tender. Mr. Hindmarsh thinks that, like some other plants, they suffer more from damp during winter than from frost, and I believe this is quite true, hence the necessity of planting them in a rather elevated position. We have lifted all our Tritomas, and replanted them on a higher level.—N. N.



NATIONAL CHRYSANTHEMUM SOCIETY—IMPORTANT NOTICE.

THE adjourned annual general meeting of members will take place at Anderton's Hotel, Fleet Street, E.C., on Monday, March 21st next, at six o'clock in the evening, to receive the Committee's revised statement of accounts, together with an estimate of receipts and expenses for the current year; to elect a President, Vice-Presidents, officers, and Committee for the year ensuing; to consider certain amendments to the rules, and to transact such business as pertains to the annual general meeting. The attendance of members is particularly requested.—RICHARD DEAN, *General Secretary*.

THE KINGSTON AND SURBITON CHRYSANTHEMUM SOCIETY.

WE are officially informed that a meeting of the Committee was held on Monday evening, and the position of the Society was gone into thoroughly. The whole of the liabilities have been discharged, with the exception of what is due to the collector and Assistant Secretary (Mr. W. D. Elsam), who voluntarily offered to let that stand over. It was satisfactory to find that last year's subscriptions exceeded in amount the sum received in 1896, and had the takings at the door come up to the average, with a small reduction *pro rata* from the prize money (which is provided for in the rules and is often done at other shows), the accounts would have stood differently. As it is, the Committee is determined to make an effort to wipe off the debt due to the collector, and is encouraged therein by the knowledge that the Society has passed through critical periods more than once in its existence of twenty-one years. It has now been definitely fixed to hold the Show on November 1st and 2nd, and Major Ficklin has again kindly allowed the use of the Drill Hall for the purpose.

SHEFFIELD CHRYSANTHEMUM SOCIETY.

THE usual monthly meeting was held on Wednesday, the 9th inst., when there was a good attendance of members present. Dr. Banham was elected Chairman. The routine business being completed, a discussion on Chrysanthemums was opened by Mr. W. Willgoose, a successful amateur grower, who strongly advocated the late rooting of cuttings in order to get the plants dwarf, and instanced cases when by adopting this system he had produced as good blooms as he had formerly grown by a longer period of cultivation. April and May he considered suitable months in which to start with cuttings for this district. A number of both professional and amateur members entered warmly into the discussion, but the result of the remarks showed that the opinion of the speakers varied considerably on the subject. The varieties grown, the time in which the plants were wanted, the quality and quantity of the blooms required, being all important factors that required taking into consideration before deciding upon which system should be adopted, were prominently brought out in the course of the remarks, which, however, proved to be one of the best and most popular discussions held at any of the Society's meetings. The exhibits for professional members were pot plants, when Mr. C. Scott obtained first prize for an excellent *Dendrobium nobile*, and Mr. W. Topham the second prize for a very fine *Azalea indica*. The amateur members competed with cut blooms, when some good varieties of Orchids, Azaleas, Callas, and Rhododendrons were staged. Mr. M. H. Willford secured first honours, Mr. P. Cox second prize, and Dr. Banham the third prize. After the admission of new members a hearty vote of thanks to the Chairman, Dr. Banham, and to Mr. Willgoose for opening the discussion was passed.

EARLY FLOWERING CHRYSANTHEMUMS.

THESE charming and useful plants are now obtaining a greater share of public attention than they did ten years ago. At one time I had my doubts if they would ever get their heads above water, their big brothers securing all the attention. Now, however, even those growers who go in for the large blooms give considerable attention to these more modest, but often more useful flowers. For single-handed gardeners, lady gardeners, and amateurs, especially those who dwell in town suburbs, the early flowering Chrysanthemum is a most useful and economical plant. The blooms are beautiful when cut for use in the house, lasting such a long time, while if the varieties are well chosen they make a splendid display in the garden, and that without any great skill or trouble.

I have in my charge one of the largest and most complete collections in the country, and last season was cutting flowers of many varieties in July, and, owing to the very mild season, right into November. Of course, many people may say that Chrysanthemums are not wanted in July or August, when there are plenty of Dahlias and other flowers to be had; but the enormous quantity of border Chrysanthemums now grown proves that many people are not particular what flower they have, provided it is good to look at and not difficult to produce.

The culture is very simple, while, like everything else, they pay for good attention. My system with young plants is to root the cuttings in February, and then either put them into 2½-inch pots or run them out with a spade into a cold frame until the end of April, when they are planted out 2 feet apart on a border of good rich soil. I do not stop the plants, but let them break naturally. They can be pinched, and thus

make bushy plants, but they are a little later in flowering. When high enough we stake with bamboos or other stakes, and tie securely, paying attention to this during the season, especially with the taller varieties. It is best to let them flower without disbudding, when they will produce delightful sprays for cutting, the blooms being just the right size for table and house decoration.

Where it is possible to obtain the space, a reserve bed should be planted (the bed to be about 4 or 5 feet wide) with the most suitable varieties for cut flowers. Up each side of these beds stout stakes can be driven in, and spare lights laid across in the autumn, thus protecting the flowers from excessive wet and early frosts. Plants can also be readily lifted and placed on a bed in a cold house, or potted in 8 or 9-inch pots. This is a good way with the later flowering sorts, such as Ryecroft Glory, Souvenir de M. Menier, Mons. G. Menier, Roi des Precoces, Mons. A. Dufour, and Jeanne Vuillermet.

The following are the best of their class so far as I have yet proved them. I give twenty-four Japanese and twenty-four Pompon varieties, but those who have not room for all can take the first twelve of each, and they will have a splendid collection.

JAPANESE.—Lady Fitzwygram, white, 2 feet, September; Mytchet, white, August, 2 feet (this is the best introduction since Mons. G. Grunerwald); Mrs. J. R. Pitcher, August, 4 feet, a lovely pale pink; Madame Carmeaux, 1½ foot, August, soft pink, changing to white, a splendid variety, and will be universally grown in a short time; Mons. G. Grunerwald, 1½ foot, August, pink; Madame Marie Masse, 2 feet, August onwards, reddish pink, most persistent bloomer; Edith Syrratt, 2 feet, August, light pink; Orange Child, September, 2½ feet, large yellow flowers; De La Guille, September, 3 feet, deep orange, passing to yellow; Baronne C. de Brailles, 2½ feet, August, white flushed with pink; Crimson Queen, September, 2 feet; Mrs. Burrell, August, 3 feet, primrose; Mrs. Hawkins, August, 3 feet, yellow; Mons. Dupuis, August, 2 feet, orange yellow; Madame Eulalie Morel, 2½ feet, September, cerise, with gold centre; Vicomtesse d'Avene, 2 feet, August, deep rose; Mdle. Guindudeau, 2 feet, September, deep pink; Madame Armand Groz, September, 2½ feet, primrose yellow, salmon centre; General Hawkes, 4 feet, September, crimson amaranth, a very striking variety; The Don, lilac, 2 feet, July, very profuse; Madame Foucher de Cariel, 2 feet, September, bright orange; Coral Queen, 3 feet, September, a distinct variety of amber colour; Harvest Home, 2 feet, September, red with gold tips; and Albert Chausson, 2½ feet, September, orange red, tipped yellow, a fine variety, and most profuse flowering.

POMPONS.—Although these are not quite so graceful when cut as the Japanese, they are very satisfactory in the garden, being persistent in flowering, resembling huge bouquets of colour, and flower very early. Piercy's Seedling, 1½ foot, August, orange yellow; Strathmeath, 1½ foot, August, rosy pink; Toreador, 2 feet, July, crimson, golden reverse; Longfellow, 2 feet, July, ivory white; J. B. Duvoir, August, 2 feet, pale pink; L'Ami Conderchet, 1½ foot, July, primrose; Madame Jolivat, 2 feet, August, blush white; Nanum, 1½ foot, August, white; Flora, 2 feet, July, the best yellow; Blushing Bride, 2½ feet, August, rosy lilac; Bronze Bride, 2½ feet, August, a splendid sport from the above; Mrs. Cullingford, 3 feet, August, the best white; Golden Fleece, 2 feet, August, a lovely yellow; Canari, July, 2 feet, a fine yellow; Alice Butcher, 2½ feet, August, red, shaded orange; Mr. Selby, 1½ foot, August, a lovely pale pink; Martinmas, 3 feet, August, light pink; Early Blush, 2 feet, August; Fred Pele, 2 feet, July, crimson, tipped gold; White St. Crouts, 2 feet, August, very hardy and free; Silversmith, 2 feet, August, lovely white; St. Mary, 2½ feet, August, white; Precocite, 3 feet, August, yellow; and La Vierge, 1½ foot, August, pure white.

The time of flowering and heights given are average, they of course vary a little according to the situation, whether grown in the north or south of the country.—S. J.

EXHIBITING HARDY HERBACEOUS FLOWERS.

I VENTURE to make a few remarks, and hope they will be the means of bringing out the opinions of other growers on the above subject. From what I have seen and heard at exhibitions, it seems to me the majority of exhibitors are of opinion that some sort of restriction with regard to the size of the bunches ought to be adopted.

During the last few years the size of bunches has increased correspondingly to the larger quantities of herbaceous plants now grown. Generally the prizes go to the "big battalions," although many of the stands contain much of what may be termed inferior quality. Were the bunches limited to a certain size, I feel sure that the quality would be improved, as scarce and newer varieties would be oftener exhibited. It would also increase competition, as many smaller growers would then be able to compete. Most ladies and gentlemen are pleased for their gardeners to exhibit and win prizes, but one can easily understand how they would object to such large quantities of flowers being cut for such a purpose.

Where classes are provided for nurserymen by themselves it is not so material about the size of the bunches, as many of them grow hardy herbaceous plants to a large extent, and can cut almost any amount; besides, there can be no better advertisement than making a great display. I would recommend that where spikes are exhibited no more than eight or nine should be allowed in one tube, and in the case of single flowers on one stem not more than twelve or fifteen.—N. N.

[In the R.H.S. Judging Code the maximum size of tube is indicated for holding the flowers, with the proviso that all the stems must reach the water.]

AS OF A DREAM.

(Continued from page 99.)

I FEAR, for 999 persons out of 1000, it would be uninteresting and difficult to conceive of were I to unfold the anxiety hinging upon the mind of the owner of two small Potatoes planted in a Seakale pot, the which by work and watchings for initiative development had cost so much time: therefore, I will leap over the minutiae and intervening cultural details to land myself in Westminster, in November, 1895, with the produce of one tuber of them only that had been induced to fulfil its destiny, and to gain the approval and a "united vote of thanks" from the R.H.S. Fruit Committee. Soon after the above event I received letters from Mr. J. Horsford and Mr. C. G. Pringle, Charlotteville, Vermont, U.S.A., from which short extracts may not be without interest.

Mr. Horsford wrote:—"I was interested to learn of your perseverance in crossing the *Solanum Fendleri* on the common Potato, or with it, and I trust you may live to see good results from this work. Potatoes have not had as much interest for me because there were so many new varieties on the market that the chances for profitable work in that line seemed much smaller than in some other lines. But with different species, who can tell what time may do? Mr. Burbank's success with fruits has given some very remarkable new things. If we may believe half what the catalogues say, he has done a service to the world. Mr. Pringle is not dead, but one of the liveliest men in America."

Mr. Pringle soon afterwards wrote:—"Twenty years have brought many changes, but I am still alive, and you can see that I have been active, when I tell you that I have been a botanical traveller since 1881, and have crossed the Continent every year to make journeys of many months' duration on our Pacific coast and in Old Mexico. I have worked eleven years in Mexico, till I have collected probably one-half its plants. Kew, the British Museum, and other institutions in various lands, possess thousands of my specimens. You may infer, and truly, that I have almost forgotten horticulture—but not old friends. Your mention of *Solanum Fendleri* reminded me that I have for your trial seeds of a rare tuberous species, and I enclose them herewith. The leaf is like a Pear leaf (it exactly represents a Sage leaf) not divided. There is rare pleasure for me in living under the bright skies of the Mexican table-lands, and working amidst the rich flora there."

I have copied the above extracts for your acceptance. Not only do I wish to have the origin of the hybrids placed beyond question, but very much more, to show the good feeling of my correspondents, which I hope may continue to predominate with America for all the English speaking Race—with a capital, Mr. Editor?

I will now return to my exhibits at the Drill Hall, in November, 1895. I planted the 100, the result of the second cross, in the spring following. They threw a strong, upright haulm, unique in blossom, leaves, and florets intermixed, upon long stalks. I tried to impregnate innumerable pistils with pollen from my early and late varieties, but with no results. In themselves they are sterile. One of the stools threw a late coronal of flowers, and I had proved in cases like this it might be my chance to find some lagging behind blossom to give me pollen.

I generally plant some of my International Kidney about midsummer, to produce us young Potatoes late in the autumn. They throw late blossoms in abundance, hence my opportunity, though I had to wait some days for farina, but the moment the pollen was ripe I applied it to the pistils of the hybrids' flowers, and to my infinite satisfaction it caused berries to swell and ripen, and produce me seed. The hybrid's crop turned out to be a late variety, and the tubers resulting took a grand leap, much resembling the Rector of Woodstock, though not sufficient in crop or flavour for commerce; but they were and are much appreciated by the missus for Irish stews on account of the manipulated sections holding to their entirety—viz., "not boiling to squash." Buchanan's antiblight powder kept the haulms intact, as in fact it did, and has done for the last five years all my Potatoes, and Tomatoes included, to the end of their chapter.

Now for the year of grace 1897. I sowed the precious seed in the tray in the glass house, and looked sharp after the woodlice depredators this time you may feel sure. Thirty seeds germinated, and became in their due time planted singly in flower pots. They were kept growing there purposely till "Jubilee Day." I mentioned it in a paper you printed concerning a hall for horticulture, how I, as a churchwarden, was calculating upon reseating our St. Michael's Church, in commemoration. It was done. I placed a last wedge under a seat, to make it level, on the eventful morning, and then "home," as old Pepys would say, to plant out the young hybrid Potatoes. We completed this operation just about the time that her Majesty was returning her thanks at the foot of the steps of St. Paul's; and the missus, Alice, myself, and David (my man) were making the welkin resound to the words of our anthem—God Save the Queen! Well, you have heard of it before that we are loyal people at Cottage Farm, so we will let that pass.

We were left severely alone all the season; no one but Mr. Arthur Sutton, his nephew (the youngest member, just admitted into the firm), and Mr. Lasham (head of the Potato department) favoured me with a visit—in fact, "sent to Coventry" may be the term for me and my experimental work last year. I must let you know about some of them in a future paper, as this is running to an unconscionable length, but I want to have it out with you about the hybrids, as far as they will carry me, as I seem to fear I may not have another year's cultural opportunity with them.

I narrowly watched the features of each plant through its growth; about a dozen showed precociousness and promise of tuber; others must

be crossed again to correct a wild tendency and induce the plants to bear their tubers "nearer home," and again in the after years probably more crossings, and certainly many more trials for growth and crop, and then the crucial finales for cookings and quality. All may possibly be achieved say by A.D. 1910. But it could be done, I give you word for it. How it will fare with the last comer from Mr. Pringle I cannot as yet guarantee. I have tried to cross it with my true English breed for two years, but it refuses. I pin my faith, however, to the mystic number three.—ROBERT FENN, *Sulhamstead*.

SOME FLORISTS I HAVE KNOWN.

ON the 12th inst. the Rev. F. D. Horner was the lecturer to a large gathering of members of the Bradford Paxton Society. The lecturer stated that, like crystals round a piece of string, his reminiscences of his many dear old friends were crystallised round him in happy memories, which necessitated the treatment of his subject, "Reminiscences of Some Florists I Have Known" from an autobiographical standpoint. He had no wish to push his own personality into prominence more than was necessary; but as his dear father, who was a physician in Hull, was the first florist he knew, his memories were carried back to his earliest days, and he had no conception of any time when his own love for flowers was dormant.

His earliest attempts at floriculture were made in his nursery windows during a protracted illness, when he utilised his empty medicine bottles as receptacles for the growth of the common field Bean and Pea, and for the propagation by cuttings of *Nasturtiums* and similar old-fashioned garden plants. These experiments in gardening, and the lessons they taught him, left a deep and abiding influence on his character. In those days the sectional florists' shows followed each other in regular succession. The Polyanthus, Auricula, Tulip, Ranunculus, Pink, Carnation, and Picotee each in its turn gave interest and pleasure to cultivators, and before he was high enough in stature to look down on the stages his father used to take him by the hand and initiate him into the standard properties of the blooms. Then came his college days, and after that his probation curacy in a slum district of Liverpool. Of course, this meant well-nigh impossibilities to gratify his passion for flowers; but on his appointment to the curacy of Normanton, then a country village, he then began to form his collection of Tulips.

During the early seventies he was appointed to Kirkby Malzeard, near Ripon, and at that period began his more general acquaintance with his contemporary florists. Strange to say at Normanton, so near Wakefield, he was so engrossed with his duties, and his spare time being devoted to the cultivation of his then favourite flower, that no opportunities had presented themselves to form an acquaintance with the Wakefield florists. He was glad, however, to state that this was remedied afterwards, but it left many regrets for the congenial fellowship which he had then missed. The lecturer then stated that his acquaintance with the late Mr. Barlow of Stake Hill, Manchester, originated in a remarkable incident. At the time Mr. Barlow was thinking of leaving England, and offered his valuable collection of Tulips for sale, and amongst them was a bulb of Annie McGregor, so perfect and constant in its feathering that Mr. Horner never remembered one to equal it, and his father purchased it at the price of 20 guineas, at which price Mr. Barlow would only part with it on conditions that he had the option of reclaiming it at any time at the price given. The reasons for Mr. Barlow's expatriation were removed, and for a time he forebore to press his claim to repurchase, and in the meantime the bulb was destroyed by an unfortunate accident, leaving Mr. Horner in the unfortunate position of being unable to fulfil his part of the bargain. Although they both highly valued this extraordinary bulb, Mr. Horner with much feeling said that as the loss of it was the cementing of a life-long friendship between them, he had often blessed the accident. Anecdotes in connection with the names of Messrs. Barlow, J. Bentley, sen., J. Bentley, jun., Ald. Wooler, Sockport, Slater, Cheetam, Mills, W. Whitaker, J. Jackson, Woodhead, J. Simonite and Ben Simonite, and others were given.

Although he had confined his reminiscences to florists north of the Trent, he could not let the opportunity pass without expressing the obligation due from all florists to the late Dr. Hogg, who, in addition to his genial personality and claims of being an ardent florist, was at all times ready to place space for reports of shows and other matters at their disposal in the columns of the *Journal of Horticulture*. The lecturer concluded his interesting remarks with an eloquent and generous tribute of esteem to his florist contemporaries, whose sense of fair play in competition was only equalled by their steadfastness to the florists' "ideal," and their perseverance to attain it.

After a cordial vote of thanks had been passed to Mr. Horner, the Chairman, Mr. Scott, drew attention to a superb specimen of *Dendrobium nobile* exhibited by Mr. Moreby, gardener to Mrs. Knowles, Moorhead, Shipley, and he proposed that the Society's certificate of merit be awarded to Mr. Moreby in recognition of his success with that grand old Orchid. That plant with twenty flowering bulbs carrying twenty flowers each was but the fifth in size in the Moorhead collection, the largest plant in it had seventy-five breaks, carrying considerably over 1000 flowers.—T. G. W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.

THE annual general meeting of this Society took place, as announced, at the Caledonian Hotel, Adelphi, Strand, at 8 P.M., on Monday, the 14th inst., Mr. George Wythes of Syon House Gardens, Brentford, in the chair. After the minutes of the last annual general meeting were read and passed, the Chairman called upon Mr. Collins to read the report and balance-sheet for the year 1897. The statement of assets and liabilities was read by Mr. J. Hudson, who said that the balance to the credit of each member was duly invested. He also stated that in the assets the £13,100 represented a present value of no less than £14,742 10s.

Mr. Wythes, in moving the adoption of the report and balance-sheet, said that it had given him great pleasure to listen to the most satisfactory accounts of the working, financial and otherwise, of the Society for the year ending January 10th last. From inquiries he had made previous to the meeting he was enabled to glean something of the progress of this excellent Society, not only during the past year, but for some years prior of that. Compared with the earlier years of the Society, the progress made was astonishing. The Society had at the present time an invested capital of £13,000, which was really worth £14,742 10s. As there were 720 paying benefit members, this would work out at nearly £20 10s. per member. He paid a compliment to the admirable manner in which the affairs of the Society were managed, for the entire working expenses during the past year were only 6 per cent. of the income. Mr. Wythes thought, however, the reason why such a Society did not increase in membership strength more rapidly was because there was too much negligence and apathy on the part of intending subscribers. Proceeding to give other figures, he said that the annual investments for the last two years were £1200, and that £10,000 in all had been invested during the last thirteen years. The members should not lose sight of the fact that the executive Committee is still enabled to allow each one respectively 3 per cent. per annum on the balances standing to their account in the ledger. This allowance of 3 per cent. cannot go on many more years at the present price of sound trustees' stocks, which realise now only between $2\frac{1}{2}$ and $2\frac{3}{4}$ per cent. At one time these stocks could be purchased below par, and this no doubt was the reason why 3 per cent. has been continued so long. The more carefully he read over the rules and regulations of the Society the more he felt disposed to give credit to the originators of "The United." Every member should do his best to obtain fresh members, never missing a chance to press home the essential features of the rules, to bear in mind the motto of the Society—"Union is Strength." The speaker had not the slightest doubt that there are many candidates for the pension of the Gardeners' Royal Benevolent Institution who would be only too glad if they were members of the United, many of whom do not appear to have belonged to any society at all. He advised all young gardeners especially to join without delay.

W. Marshall, Esq., seconded. He said that as one of the originators he was glad to congratulate the Society on its success. It was started with eight or ten members, and now they had 720. He had always found gardeners to be civil, obliging, and deserving men, and was glad to do what he could for their benefit. On being put to the meeting, the report and balance-sheet were unanimously adopted. On a motion by Mr. Cole, it was decided to print and circulate 2500 copies of the report and balance-sheet.

At the election of officers which followed Messrs. W. P. Thompson, E. T. Cook, Wheeler, and Wood were unanimously re-elected as members of Committee. Mr. Cole proposed a hearty vote of thanks to the Treasurer (Mr. J. Hudson) for his excellent services, which was received with acclamation. Mr. Hudson suitably responded, assuring them that he was glad to do all he could. When he first took the post of Treasurer he invested £200 the first year; last year he invested £1200. On the proposition of the Chairman, seconded by Mr. J. Hudson, Mr. W. Collins was unanimously asked to continue the office of Secretary. Both proposer and seconder spoke very highly of Mr. Collins' services. That gentleman briefly replied, and acknowledged the pleasure he felt in performing the secretarial duties, aided as he was by such a capital Committee.

On the motion of Mr. J. Hudson, Mr. Collins received for 1897 a salary of £20 according to rules, a bonus of £5, and 6d. from each member over the number of 300.

Votes of thanks to the Committee, the Trustees, to the Press, and the Chairman were passed.

THE SPECIAL GENERAL MEETING.

A special general meeting followed upon the conclusion of the "annual," for the purpose of considering the advisability of altering certain rules.

Mr. Hudson proposed that Rule VIII., referring to the Secretary's salary, read "£30" instead of £20.

Mr. Burge moved, and Mr. Cole seconded, that in Rule XIV., after the words "lower scale," the words "with the privilege of increasing this to," should be added.

Mr. Thompson proposed, and Mr. Winter seconded, that the word "successive" be struck out of Rule XIV. Mr. Thompson showed conclusively how important this was in the case of a member going on the funds after having been on a few weeks previously, say for twenty-four weeks, when by declaring off for a week or two he would again be eligible for the full series of twenty-six weeks at full pay.

All these alterations were carried, the last-named after some discussion.

On the motion of Mr. Cole, a new rule relating to the Voluntary Convalescent Fund, was added, to be called Rule XVIII. It read as follows:—"The object of the Fund is to give members a change of air during convalescence. The Committee of Management to have power to relieve members of this Society from the Voluntary Fund as they may deem advisable. All cases must be recommended by a duly qualified medical practitioner."

RED SPIDER IN VINERIES.

I HAVE been reading Mr. Thomson's articles on the above subject with much interest, for whoever propounds a safe and certain remedy for the destruction of red spider on Vines will be one of the greatest benefactors gardeners ever had. I have usually resorted to sponging Vine leaves with an insecticide for routing their enemy, as I dislike the parching atmosphere created by painting the pipes with sulphur, the results as to the "spider" being with us of a very fleeting character. It may have been the fault of the sulphur, but it was what is generally known as flowers of sulphur. However, I desire to be on the right track, but am somewhat confused as to the exact product Mr. Thomson advocates.

By reference to the "National Encyclopædia," I find that although sulphur exists in Iceland, Teneriffe, St. Vincent, and some other places, the expense of obtaining it is so great, that Sicily is almost the only source of supply. Anyhow, that upwards of nine-tenths of the whole quantity imported into this country is received from Sicily, where the native sulphur is roughly purified. The sulphur thus obtained is imported into this country and again refined by distilling in a large iron pot; the vapour is condensed in a spacious brick chamber in a fine pulverulent form, known as flowers of sulphur.

Further, the article states that sublimed sulphur or flowers of sulphur is a slightly gritty powder, without taste, and without odour till heated. Precipitated sulphur or milk of sulphur resembles sublimed sulphur in its general properties, but is much paler in colour, and is in a finer state of division. Also that sulphur is obtained on a large scale by decomposing with an acid the crude calcium sulphide obtained from the vat waste from the alkali manufacture, but only part of the sulphur can be thus extracted. Is this where the difference occurs, or is it in the different method from that usually practised that proves its efficacy?

I should esteem it a favour if Mr. Thomson would put me right in the matter. I stand indebted to him for much that I have learnt through the teaching of his various works and writings, probably to me of double interest, knowing, as I do, the spot of his earliest achievements, of which in past days I heard much; also those of his old friend, the late Mr. Thrower, of High Canons, to whom he refers in the last issue of the Journal, which gardens I have visited in the long ago, and seen the good man and his work. I trust your able correspondent may long enjoy his well-earned rest, and still assist us with teachings from his long and successful experience. — J. J. CRAVEN, *Allerton Priory Gardens, near Liverpool.*

CENTAUREA CANDIDISSIMA.

I HAVE had at various times large quantities of this plant to propagate, and my favourite method of proceeding is similar to that of your correspondent on page 176. I used to slip off one or two side shoots from each plant about the first week in August, and without much trimming place one in each pot of sandy loam. Water was then given to settle the soil firmly around the cutting, and the pots were then plunged in leaf mould in a cold frame behind a north wall. About 90 per cent. or rather more would form roots, and if the frame were on a dry bottom, and the lights in good order, they were wintered in that position. I invariably found damp to be more injurious than a few degrees of frost.

Anyone wanting large numbers of this handsome foliage plant will do well to adopt the plan suggested. The advantage of taking the cuttings so early is that they have time to root, and become well established before the winter. One or two pieces from each of the old plants are not missed, and will not interfere in the least with the decorative effect of the flower garden or bed. Although these plants are easily raised from seeds, I prefer autumn-rooted stock, and besides, I find indoor space early in the year is too valuable for such plants as can be successfully wintered in cold frames.

I can fully endorse all your correspondent says of the combination of this plant with *Coleus Verschaffelti*. I once saw a magnificent bed not more than six miles from Deal, and within sight of the Downs, which has left a lasting impression on my mind; and whenever speaking of *C. Verschaffelti* this particular bed flashes before me. I very much regret the latter will not succeed outdoors here. — J. EASTER, *Nostell Priory Gardens.*

I HAVE read with interest the remarks which have appeared in recent issues of the *Journal of Horticulture* as to the best methods of propagating this handsome plant. We grow it largely, and find no difficulty in keeping up the number required for bedding purposes, for which it is admirably adapted, and is one of the most effective plants we have.

Cuttings may be had in abundance by placing the old plants either in the reserve garden or the herbaceous border, and by twisting out the crown as soon as it commences growth the small shoots at the side will in a very short time grow apace and be fit for insertion in pots (well drained) of sandy soil. I prefer pulling the cuttings downwards from the parent

plant and inserting with a heel; in fact, similarly to propagating Carnations. The cuttings should be covered with a bell-glass, which must have the moisture wiped from it twice daily. A half-spent hotbed is found to answer the best for rooting the cuttings.

Seedlings are easily raised, and we find them come true to character. A few old plants were selected last year and planted in an open and sunny position, where they flowered and seeded freely. The seed was gathered as soon as ripe and sown at once, and we now have a number of healthy plants. Although they have not grown very large, we shall find them invaluable for edgings to smaller beds for the summer months. Then by the autumn at lifting time they will make excellent plants.

We raise a number of seedlings annually for potting. The plants may be utilised in the greenhouse or conservatory with excellent effect during the dull winter months. This *Centaurea* is very impatient of excessive watering, therefore we allow the plants to become almost dust dry before applying water in the winter season.—H. T. M., *Stoneleigh*.

CHOICE ANNUALS FOR CUTTING.

NEVER, perhaps, in the history of the floral world has there been such an increasing and popular demand for cut flowers as at the present day, for there is no function however small in which floral decorations do not form an important part. It is essential, therefore, in making our selection for the ensuing season to choose annuals not only for their bedding qualities, but for their peculiar gracefulness and beauty and their enduring properties as cut flowers.

There are undoubtedly frequent failures through hurrying seeds into cold soils before the season is advanced enough for them to germinate and grow freely; it is therefore necessary, in order to get plants as far advanced as possible, to sow under glass in a moderate heat. Shallow, well drained boxes filled with light, rich sifted soil are suitable for this purpose, the compost consisting of equal parts of loam, leaf mould, peat, and sand. Sow thinly, cover the seeds but slightly, and place in a temperature of about 55°. Should the soil be in a proper condition for the reception of the seed very little watering will be required till the seedlings appear, when shading from the midday sun and a slight watering occasionally will be all that is necessary. As the seedlings progress give more light and air, and when large enough prick them out in light, rich soil in cold frames, giving air during the day and slight protection at night. By this means strong plants may be expected for transplanting into their flowering quarters in May.

Of course, in all lists of any pretensions, Asters and Stocks hold a foremost place, but those who have not yet tried the beautiful single Aster *Callistephus sinensis*, would do well to include it in their lists this year. It is a beautiful Marguerite-like flower, having a most charming effect in loosely-bound bouquets and other cut flower work, while its varied colours, its lightness and gracefulness, make it exceptionally valuable. Stocks are splendid bedders, and a good strain of Ten-week yields every shade of colour with a good percentage of double flowers; but among these the pure white variety, "Princess Alice," should hold a prominent place. This is a large and bold sweetly scented variety, and most useful for cutting. *Cosmos hybridus* is not so generally grown as its merits deserve, as it is a most charming annual of very easy culture. The flower very much resembles the single Dahlia, being, however, smaller and more graceful, while its elegant *Nigella*-like foliage greatly enhances its value and beauty. The seeds, which are rather large, germinate quickly, and as the plant grows to about 3 feet in height, it forms a valuable addition to the flower border, blooming continuously until cut down by the autumn frosts.

Sweet Sultan, or *Centaurea suaveolens*, should become more extensively grown. It is delicately scented, and for cut flowers is becoming a great favourite in the market. White, yellow, and purple are the colours usually grown. The *Salpiglossis* is among the most beautiful of all annuals, its varied and brilliant colours, so delicately veined, making it exceedingly attractive. A group of this superb annual is a sight to be remembered. *Phlox Drummondii grandiflora* has been wonderfully improved during the last few years. It is a most profuse bloomer, and if the seedlings are pinched back they make well branched plants by bedding out time, and flower continuously until the autumn. Verbenas are easily grown as annuals, and the many new hybrids added recently have greatly increased their value. By growing yearly from seed, the mildew which frequently attacks old plants when grown through the winter for cuttings is avoided. The Marguerite Carnation, if sown early, will bloom profusely in the autumn, either in pots or in the open ground. *Calliopsis grandiflora* is a brilliant golden flower which will soon become popular. Sow the seeds in spring and prick out as soon as the seedlings are strong enough. This is a continuous bloomer, and a gem for cutting.

The New Star and Little Gem *Antirrhinums* with their fine blooms are admirably adapted either for pots or bedding purposes if sown in spring on gentle heat and planted out in June.

Many other annuals might be enumerated as worthy of culture for the purpose of supplying cut blooms, among them being Chrysanthemums, Scabious, Sweet Peas (Eckford's new varieties being worthy of a place in any garden), and Mignonette; but it is unnecessary to refer to them in this paper, as I have endeavoured to bring to the notice of your readers only those which seem to me not so generally known as their peculiar merits deserve; and all gardeners, where cut flowers for decorative work form an important feature, would do well to add those enumerated, and in doing so I can assure them, as one in practice, they will not regret their endeavours.—W. R. GOTT.

THE SCIENCE AND PRACTICE OF FORMING FRUIT TREES.

(Continued from page 207.)

LAST week reference was made to different methods and times of shortening the branches of young bush or standard trees, planted either during the last autumn or the present spring. The illustration on page 207 represents the practice of not cutting back all the branches at the time of planting, or when the buds are dormant, but waiting till the buds towards the extremities of the branches are bursting into growth, then shortening the long and strong branches, leaving for a time the short and weak shoots to develop early leafage for the purpose of influencing root formation. The practice is also shown in the present illustration (fig. 53, E), while another, and more commonly adopted method, of shortening the whole of the branches when dormant, is represented in F. A few remarks pertaining to both may be elucidatory.

PYRAMIDS.—All trees may be suitable for bushes, but not all for pyramids, some naturally forming these with little trouble, and the pruner, who acts in accordance with natural principles, effects the greatest good at the least expense. The tree (E) shows this character, having a central shoot or leader (o), and four lateral growths or side

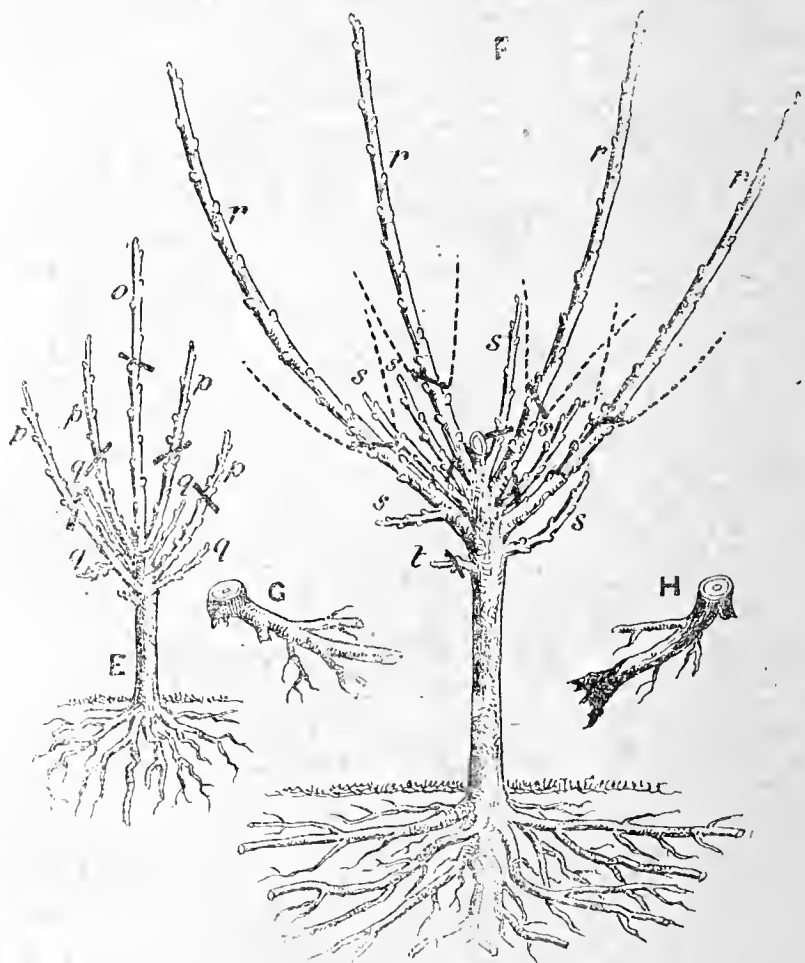


FIG. 53.—PRUNING RECENTLY PLANTED FRUIT TREES.

References.—E, shortening the strong, and leaving the weak shoots intact; o, leader; p, strong side shoots; q, short and weak shoots. F, shortening all the shoots, r, to the cross marks; s, to basal buds. G, uncallused root for fibre production; H, jagged and dying back root.

shoots (p) little less vigorous, with some shorter and weaker (q). Pruned, as indicated by the lines across the shoots, strong growths will issue and the pyramidal habit be retained without much need of manipulation; the tree becomes well established on leaving the weaker parts intact till the new growths above q are extending freely.

2, THE CUT-ALL-SHOOTS-BACK SYSTEM.—F represents the principle. This course certainly results in plenty of growths when the root system is good, the tree having been transplanted in the autumn, but when the roots are meagre little can result but weakly growths both above ground and within it. The late planted tree will neither have callused at the roots nor have the buds nearly so forward as the early planted, especially if lifted whilst dormant and moved from market to market. This is an exceptional case, and I am not disposed to question the close pruning system in such case. The root (G) shows fairly what has to be done for the production of fibres as shown in D (page 207), before there can be free growth, which cannot be expected from an injured root (H), as it will die back more or less through decay at the point of damage.

Quite apart from these considerations, and the tree being a fac-simile of the one figured last week, and planted at the same time, the question is whether we get as good growth by pruning it at the time of planting or before the growths have started, as in the early spring. That the pruning would be best deferred until the terminal buds had commenced to grow accords with the safety from frost principle, and in effect favours the view that the roots will be in advance of the top when the pruning is done to practically dormant buds. On the other hand, when the law of reciprocity comes into force, as it does undeviatingly, top and root

growth are alike influenced by stored matter, and the activity of this is promoted by warmth and moisture.

The tree (r) shown in fig. 53 is intended to indicate what is meant by hard pruning, and leaving nothing but essential parts. The shoots (r) are cut back a few buds nearer the base than in the other tree, and all the weak growths (s) shortened to a bud at their base, even the spur (t) is cut back. It is the pruning for shape system, and I am not by any means certain as to whether it is not the best for trees that have not been recently moved, and must suffer a large reduction of roots in transplantation, especially when on free stocks. That is another phase of the subject, for the stronger the tree the more roots it loses, and the greater need for the curtailment of the branches. In order, therefore, to arrive at any clear deduction the systems must be carried out on similar trees under an identity of conditions, so that the results cannot possibly be questioned. For those reasons three trees have been selected as near as may be alike for illustrating the points in respect of pruning before mentioned, and there remains but one more, namely—

3, NOT SHORTENING THE SHOOTS IN THE SEASON OF PLANTING.—In this case, leaving A (page 207) and F in the present sketch, just as they are at root and top, there are a few considerations that must have attention. If the tree has a large top and few and short roots, it will probably swell the buds and even produce a little growth; yet there it ends, and the probability is that it will die or linger on, not making any top growth of consequence until headed hard back another season, or, under the most favouring circumstances, take two years to recover. On the other hand, a young tree with shorter growths and a good system of roots, as often seen on dwarfing stocks, the balance is not so greatly disturbed, and there is the less necessity for close shortening. For the purpose of illustration, neither strong nor weak examples are chosen, but good average typical trees, such as are raised by experienced nurserymen for supplying to their customers. We, therefore, start fair with all the trees, and thence proceed to results, which will be shown in future issues.—G. ABBEY.

(To be continued.)

LONDON'S OPEN SPACES.

IV.—BATTERSEA PARK AND KENNINGTON PARK.

ONE important metropolitan improvement always to be remembered to the credit of the poor Metropolitan Board of Works was the conversion of the dreary wilderness of Battersea Fields into a lovely park. Formerly the resort of the riff-raff of the town, it is now quite a fashionable centre, while its once aristocratic neighbour, Ranelagh Gardens, has faded into bricks and mortar. The picture of Battersea Fields forty years ago is anything but inviting. A flat and unbroken waste of some 300 acres, 'it was a sort of 'no man's land,' on which ruffianism claimed to riot uncontrolled by any other authority than its own will.' The Sunday scenes were a scandal even in none too fastidious times, and the pugilistic encounters, dog fights, and other barbarous exhibitions were abolished by magisterial order in 1852.

Many duels were fought in the fields, the most famous of these being the encounter between the Duke of Wellington and the young Earl of Winchelsea only eight years before the Queen came to the throne. The Duke was Premier at the time, and with his characteristic impetuosity thus chose to resent an attack on him for his support of the Roman Catholic emancipation schemes. A letter in the "Standard" newspaper (then but two years old) spoke of Wellington's "invidious designs for the infringement of our liberties and the introduction of popery into every department of the State." The laboured phrases of the youthful Earl's letter seem to sober-minded people of to-day small provocation for an "affair of honour." The ducal Hotspur, however, insisted on the encounter, and on March 21st, 1829, the two noblemen faced each other on Battersea Fields. The Duke won the toss, giving him the right of firing first, and, fortunately, missed his man. Then the Earl discharged his pistol in the air, and offered a tardy retraction and apology. On the edge of Battersea Fields stood the Red House Tavern, familiar to every reader of "Sketches by Boz." It was equally famous for its pigeon shooting and for acting as the winning-post of many a lusty boat race. Tradition has it that Cæsar crossed the Thames 50 yards west of this spot in pursuit of the flying Britons, the reason being that there existed here till very recently a natural ford in a shoal of gravel not 3 feet deep, and broad enough for ten men to walk abreast.

Happily, at the time the great outcry was raised against Battersea Fields the demand for lungs for the swiftly growing metropolis was arousing public interest. The Red House, with its shooting grounds, was purchased in addition, making a total acreage of 185. The Metropolitan Board of Works in a few years converted the wilderness into gardens of surpassing beauty. For the land a sum of £246,500 was paid, and altogether £65,500 was spent on the laying out and improvements. Now it is so rich in trees, shrubs, and flowers that many claim Battersea Park to be no insignificant rival to Kew Gardens. Its Palm trees alone would make it famous. In the acclimatisation garden are wondrous Aloes, giant Cacti, and gorgeous growths of the tropics in strange neighbourliness to flora of the Alps. The lake of Battersea, too, is a vastly popular pilgrimage. It winds round beautifully wooded islets and under rustic bridges, its waters bearing many rare and curious species of water fowl. The great avenue of the park is the modern rival to Rotten Row, but beauty no longer mounts her horse but rides in bloomers on a bicycle. On some days the votaries of the wheel may be counted in hundreds, and all

lady riders have made their earlier runs on its smooth roadway. Battersea also has cricketer records, one of the most enthusiastic wielders of the willow here being John Burns. The local member is, it will not surprise many people to learn, a "desperate slogger."

Kennington Park, which stretches for some distance along the old Roman road, near the Oval, was known as Kennington Common until a comparatively few years ago. It was then an unlovely waste, practically grassless, and decorated with nothing better than broken kettles, dead cats, and other domestic flotsam. Round it ran some tumble-down wooden rails, which were not sufficient to keep donkeys from straying there. Field preachers and political orators also made it one of the chief scenes of their performances. It consisted of about 20 acres. Suddenly it was seized with a fit of respectability, and, thanks to an annual vote of £1800 by the Government, clothed itself around with elegant iron railings, its area being at the same time cut up by gravel walks and flower beds and shrubberies. It also engaged a beadle to look after it. And so it became a park, and a considerable ornament to the neighbourhood.

In "A Tour Round London" in 1774, the author describes it as "a small spot of ground on the road to Camberwell, and about a mile and a half from London. Upon this spot is erected the gallows for the county of Surrey, but few have suffered here of late years. Such of the Scotch rebels as were tried by the Special Commission in 1746 and ordered for execution suffered at this place, amongst whom were those who commanded the regiment raised at Manchester for the service of the 'Pretender.'" Among those here executed were Sir John Wedderburn, John Hamilton, Andrew Wood, Alex. Leith, Towneley, and Fletcher, and Captain James ("Jemmy") Dawson, over whose body, as soon as the headsman's axe had done its terrible work, a young lady, who was attached to him tenderly, threw herself in a swoon and died literally of a broken heart. The event forms the subject of one of Shenstone's ballads. "Jerry" Abershaw, the notorious highwayman, was hanged here, his body being afterwards hung in chains on Wimbledon Common. St. Mark's Church now stands on the place of execution. On April 10th, 1848, the great Chartist demonstration took place on Kennington Common. About 50,000 assembled, under the leadership of Feargus O'Connor and Ernest Jones. Timid people hid their spoons in waterbutts, and talked of the Kennington revolution; but the fizzle of the movement is matter of history.

During the last century Kennington Common was, at holiday times, an epitome of "Bartlemy Fair," with booths, tents, caravans, and scaffolds, surmounted by flags. It had also one peculiarity, for, as we learn from "Merrie England in the Olden Time," it was a favourite place for merry andrews and other buffooneries in open rivalry and competition with field preachers and ranters. It was here that Mr. Mawworm encountered the brickbats of his congregation, and had his "pious tail" illuminated with the squibs and crackers of the unregenerate. George Whitefield preached there frequently in 1739, often to 50,000 people at one time, while audiences of 30,000 were quite common. On June 24th, the same year, Chas Wesley preached there, in spite of the fact that he was under a prohibition not to preach anywhere until he had been before the Archbishop of Canterbury and accounted for his "irregularities."—"Lloyd's News)."

THE YOUNG GARDENERS' DOMAIN.

AN "OLD BOY'S" RECRUIT.

I HAVE read with great interest the contribution by "An Old Boy" on page 226, and trust his remarks will be the means of waking up young men who are able and desirous of making use of the "Domain" columns in the *Journal of Horticulture*. An opportunity like this has not been previously afforded, and we ought to make the page the success it ought to be as the work of young gardeners.

I have not hitherto contributed to the "Domain," having left the space to be filled by others, but lately there has been a marked falling off, and I hope that the article contributed by "An Old Boy" will be the means of stirring us up to fill its column to overflowing. Probably some young men have, like myself, sought fresh fields and pastures new in their upward flight in gardening. In such case I wish for them every success in their new surroundings.

Changing situations is essential to all probationers. Some of us look forward to a departure, not unmixed with regret, at leaving scenes and faces which have become familiar. Our chiefs often look upon a change as a necessary evil to be borne periodically, and very raw recruits sometimes have to be initiated into the mysteries of their respective positions. This I know to be one of the troubles common to head gardeners, and yet they would not seek to deter any of their staff from making a beneficial change.

I trust we shall again hear from "An Old Boy" in the near future; his contributions are always interesting and acceptable; his advice is such as might safely be followed by all bothyites, myself amongst the number, and I tender my thanks for the kindly interest he has shown towards us.—F. L. T., *Burwood*.

SEQUEL TO "AN OLD BOY'S" HOMILY.

SURELY everyone loves pleasant pictures—for their beauty, for their story, for both. Some picture scenes seem like finger posts guiding us to ideal lives, as our models. Here before me is portrayed in group—a patriarchal sage instilling wisdom to a cluster of eager young folk who nestle around him. In his right hand he holds an hour glass, his knees support an open book, and one almost sees the long grey locks quivering, and the shaky upraised left hand clinch for emphasis to his expositions.

There it hangs, a lasting reproof to indolence, having a latent power which never fails to inspire one with renewed resolves. Only last week we had a practical representation of a similar scene, when a good old man sought to encourage his young friends by a gentle homily. Shall we accept and act on such sound advice, and thus save ourselves from further reproof? Can we explain why "only half a dozen bright pens sustain the 'Young Gardeners' Domain?'"

Many seem to cling to the advice which Burns gave to a young friend:—

"Conceal yersel' as weel's ye can
Frae critical dissection."

Which advice they seem to have appropriated and acted well up to. Others forget that "youth comes but once in a lifetime," or that "a bad ending follows a bad beginning." We have another more gratifying response, though, to the question, in the fact that "a few (do) spend their evening hours"—aye, right up to and past midnight—"in studies and educational work." It is well when youths put a value on time, and prepare for a definite future, for worthy positions, and a glorious independence. "He is a wise man who, like the millwright, makes use of every gust." The "golden moment set with its sixty diamond seconds" is too much for poor folk to lose.

To write articles during the winter season is, happily or unhappily, more than some of us have time to allow for. Our aim then should be to obtain a sound foundation on which to build. This is only attained by prolonged studious application, necessitating the subversion of many things—writing among them. Industry is sweet. But why, when we do write, does the "Old Boy" expect only a few to enter by the teacher's door to this "Domain?" This seems unseemly. The whole of our literature is surely educational. However, everyone has not equal opportunities for gaining instruction in the sciences underlying our work; therefore the favoured minority in this respect might act more truly, as teachers to handicapped brothers.

It would seem, after all, that young gardeners are considered an immature fraternity, capable of little beyond writing a few lines on subjects beaten to death. Much garden print bears out this conclusion. We console ourselves by remembering that Pitman's phonography was invented by the late Sir Isaac at twenty-four. Burns died young, so did Byron. Loudon issued a work on forestry and landscape gardening when only twenty-four, and William Pitt controlled the affairs of a British Parliament while younger even than this. But —! "An Old Boy" has shown it to be our duty to build up a temple of knowledge. Then let us not be slothful. Keep such names as Lincoln, Garfield, Cleveland, and others of the "Log cabin to the White House" series of heroes ever in view, not forgetting David Livingstone, Kitto, Hugh Miller, Chalmers, and Cobbett as samples of hundreds more who have plodded onward and upward. These lines are often quoted:—

"The heights by great men reached and kept
Were not attained by sudden flight;
But they, while their companions slept,
Were toiling upward in the night."

These ruminations must now conclude. If it be that any of our present fellow workers become eminent, let us hope they may never rest contented by comparing their knowledge with those who grope below, but rather with those who soar far above them.—A YOUNG SCOT.



FRUIT FORCING.

Cucumbers.—Plants which have been in bearing all the winter in houses will require frequent attention. Remove all exhausted growths and bad leaves, encourage a free growth, stopping the bearing parts two joints beyond the fruit, and secure the growths to the trellis. It will much invigorate the plants if a little of the surface soil be removed, and a top-dressing of turfy loam, with a suitable chemical manure mixed in, be supplied; and when the roots are active in the top-dressing sprinkle a few sweetened horse droppings on the bed occasionally, feeding as required with liquid manure in a tepid state. Young plants will need more soil, adding to the hillocks as the roots protrude. Maintain a night temperature of 65° to 70° when mild, 70° to 75° by day from fire heat, keeping through the day at 80° to 90°, closing early in the afternoon, with abundance of moisture, securing a steady bottom heat of 80°.

Fermenting material-heated pits and frames which have been set to work some time will need linings about 2 feet wide. Look carefully to the frame after the heat generates in the lining to see that there is no accumulation of rank steam, preventing it by a little ventilation, especially when the sun shines. Add a little more soil as the roots spread on the surface, taking care to have it warmed. Attend to training and pegging the shoots, not overcrowding them; stop the leaders a foot from the side of the frame, and pinch the laterals one or two joints beyond the fruit. In watering do not wet the foliage more than can be helped. A night covering will be necessary to maintain a temperature of 65° to 70°,

allowing the temperature to rise to 85° or 90°, closing before it falls below 85°.

Melons.—The very early plants have made a sturdy growth, and are showing fruit on the first laterals. To insure these setting it is necessary to keep the bottom heat steady at 80° to 85°, with sufficient moisture in the soil to prevent flagging. A rather warm and dry atmosphere favours the production of pollen, affording a little air to prevent the deposition of moisture on the flowers. Fertilise the blossoms every day when fully expanded, and stop the growths one joint beyond the fruits. When these commence swelling remove all flowers, earthing up the roots by placing warm soil against the sides of the ridges or hillocks, pressing it firmly. Apply water as required, and sprinkle the floor in the morning and evening, lightly syringing at closing time when the days are bright.

To swell well, Melons require a night temperature of 65°, or a little more in mild weather; 70° to 75° by day artificially, 80° to 90° from sun heat, closing early in the afternoon so as to raise to 90° or 95°, even 100° doing no harm provided the atmosphere is moist. If a succession of fruit is wanted in the same house, some of the plants should be deprived of the flowers that appear on the first laterals; stopping these at the second joint will cause the sub-laterals to show fruit, which will be several days later. Place supports to the fruits in due course to relieve the plants of the weight. Make additional plantings, pressing the soil around each plant, shading for a few days if the sun be powerful.

Peaches and Nectarines.—*Early House.*—Trees started at the new year will require disbudding carefully, removing the strongest and ill-placed shoots, and have all the leading growths tied down, taking care not to overcrowd them. Proceed by degrees in thinning the shoots, taking off those on the under side of the trellis or otherwise badly placed. Syringe the trees during fine days, and ventilate early in favourable weather. The temperature may range from 55° to 65° at night, and 60° to 65° by day, ventilating at the latter temperature, and closing the house when the heat is decreasing, allowing an advance to 70° or 75° from sun heat. Avoid cold draughts of air, but admit a little air constantly and freely in favourable weather, so as to secure sturdy growths, well-developed foliage, and thoroughly solidified wood.

Houses Started in February.—The trees being now in flower, or nearly, should be examined, and if there are more flower buds than are needed, all those on the under side of the shoots should be removed, as well as others as necessary. Maintain the night temperature at 50° to 55°, and 55° by day, with a little ventilation, as a close atmosphere is fatal to a good set. Ventilate freely above 55°, but avoid cold draughts, and allow an advance to 65° with sun heat. Fertilise the flowers in the early part of fine days, either by shaking the trellis or drawing a camel's-hair brush over the flowers when the pollen is ripe. Syringing the trees must cease whilst they are in flower, but the floor should be sprinkled in the morning and afternoon of fine days.

Houses to Afford Ripe Fruit in Late July and August.—These being planted with midseason varieties, will afford fruit at the time named. Close the houses, syringe the trees two or three times a day until the buds show colour, when it must cease. Do not keep the trees constantly dripping with moisture, but damp sufficiently early to allow them to become fairly dry before night, and on dull days only damp the paths. The inside borders must be brought into a thoroughly moist state. Maintain a temperature of 50° by day, 40° to 45° at night, advancing to 65° with sun and full ventilation.

Late Houses.—If the lights are off there need not be any hurry in replacing them before the middle of March, as that will be early enough to have the trees in full blossom by the middle of April, and then they have the benefit of the sun heat. Many late houses are unheated, which is a great mistake, as the flowers, even in April, are not safe from severe spring frosts, and the fruit does not ripen well if the late summer be cold and sunless. A gentle heat during the flowering period does much towards a good set, and in autumn artificial heat ripens the fruit and wood, plumping the buds wonderfully. Houses with fixed roof-lights should be ventilated freely, and the borders must not be allowed to become dry, giving thorough waterings to insure the moistening of the soil.

Wall Cases.—Where these are employed, whether over Peach or other description of fruit trees, the chief consideration is retarding the blossoming. Peach and Nectarine trees, also Plums and Cherries, need not have the lights put on until the middle of March; but Apricots should have the lights put on when their flower buds begin to show white, and after they are placed on, ventilate freely, as nothing is so fatal to hardy fruit blossom as a close moist atmosphere. Those that have not had the roof lights removed may need supplies of water, so as to bring the soil into a thoroughly moist state, and may have the border mulched with a couple of inches thickness of rather short, somewhat fresh manure. Ventilate freely to retard the flowering to as late a period as possible.

THE KITCHEN GARDEN.

Globe Artichokes.—The protective material around Globe Artichokes ought to be removed before it has the effect of weakening fresh sucker growths. If top growth is far advanced when the winter covering is removed, afford temporary protection. It is yet full early to thin out growths or to form fresh plantations, but some nearly decayed manure might, with advantage, be given all that are well established. Bare the surface roots to a distance of 18 inches or 2 feet from the centre of each clump, give a dressing of manure, and cover this with the soil thrown back.

Celery.—For the main crop sow seed at once of pink and red varieties in preference to white sorts, as the former are usually the most solid, crisp, and nutty in flavour. Sow somewhat thinly on the surface of

boxes or pans of sandy soil, previously well moistened, press the seeds in it, and cover lightly with fine soil. Place in gentle heat. Shade heavily till the seed has germinated. If not already done, prick out the earliest raised plants in boxes of rich soil, placing them in gentle heat till well established, transferring them to shallow frames before they become drawn. Where Celery is wanted extra fine for the August shows it pays well to transfer the requisite number of plants from boxes in which they were first pricked into 5-inch or 6-inch pots, from which they may be transplanted with the least possible check in May.

Early Beet.—If there is a possibility of the supply of old roots failing earlier than desirable, early roots can be had by sowing the Turnip-rooted varieties thinly in boxes of light soil, placing in heat to germinate, hardening the plants when about 3 inches high, prior to planting them on a warm border or at the foot of a warm wall. Seeds may also be sown on a warm border thinly in drills 12 inches apart.

Lettuce.—Cold weather has checked the hitherto rapid growth of Lettuce plants that were set out in the open ground last autumn, but with a change to mild weather the more advanced may be loosely tied up to hasten blanching. More from the seed beds or frames should be planted on rich ground, and early winter-raised plants ought to be now nearly large enough for planting out. Seeds of some rapid-growing variety might be sown in boxes under glass. The plants resulting could be established on rich warm borders or open plots of ground, would heart well ahead of any raised quite in the open. At the same time sow seeds in the open, in drills 9 inches to 12 inches apart. Slugs are numerous, and must be prevented by frequent light surfacings of soot and lime.

Peas.—Those raised under glass for planting out ought not to be kept long enough in pots or boxes for their roots to become badly matted together and their tops stunted. Take extra pains with the preparation of the sites for them, plant somewhat thickly, because they will not branch strongly; firmly surround the roots with good fine soil, stake at the same time, and protect from cold winds. Peas sown in the open ground have come up strongly. Draw the soil up to them, more especially on the cold side, to protect the plants somewhat from cold winds, and stake early. The choicer second early or successional wrinkled seeded varieties may now be safely sown in moderately rich, deeply cultivated soil.

Potatoes.—With the ground in good working order planting ought to be persevered with. For these important crops cultivate deeply, the cleanest and best crops turning out of ground finely divided to a good depth. Late disease-resisting varieties should be given abundance of room, the rows being not less than 30 inches apart and the sets 12 inches apart in the rows. Shorter topped, quicker maturing varieties may be 6 inches nearer together. Keep a close look out for the advancing haulms of early varieties on warm borders, keeping it well moulded up, and otherwise protecting from frost when necessary.

Turnips.—An east border is the best position for early Turnips. In any case provide a well manured site, this promoting quick growth. The Extra Early Milan is the best for early sowing, with Early Snowball as a succession. Make the ground fine and firm; sow the seed thinly in drills from 12 inches to 15 inches apart, the first named variety requiring the least room. Dust the plants directly they are seen with soot and lime to save them from slugs and flea.

THE BEE-KEEPER.

DOUBLING HIVES.

ON page 179 "G. H." says "he knew the method and practised doubling years ago when in his teens." That, however, proves nothing. It may not be too late even now to suggest that if he again tried the system on slightly different lines he would find out that there is a right way and a wrong way of carrying out this operation, simple as it may appear. But if he be well satisfied with his frames of various sizes he will be well advised to keep to them. In doing so, however, he must not ignore what others are doing whilst managing their bees in a different manner.

"G. H." says "the arithmetic propounded is not a fair comparison," and goes on to explain that "by using two supers holding ten frames, each 20 inches by 5½," a much greater comb surface is obtained than in the super mentioned in previous notes as having nine standard frames. It may therefore come as a surprise to "G. H." to be informed that we have frequently had two supers of nine standard frames each, and a crate of shallow frames on a strong colony during the height of the honey flow, and, what is more satisfactory, they have been all filled. Now as regards the number of superficial inches of comb for storage purposes, he will find that his large hives and supers are "not in it." We have several hives of similar dimensions, and larger than those advocated by "G. H.," holding from twelve to twenty and upwards standard frames in the body of the hive, and our experience is that when shallow frames are used as supers it is a great advantage to reduce the number of frames in the brood nest, and place an extra crate of shallow frames on the top. If it is an extra strong colony, and honey is coming in freely, at least four crates of shallow frames may be used with success, and if "G. H." will give this plan a trial during the coming season we have no doubt of the result.

THE QUEEN'S LAYING POWERS.

"Has a queen room for her egg-laying power in the height of the season when she is capable of laying from 3000 to 4000 eggs per day?" This query refers to a hive holding ten standard frames, and we at once reply yes and no. This may appear somewhat of a paradox, but it is nevertheless true. As regards the number of eggs laid by the queen the weather must be taken into consideration, and the month of May is the time when bee-keepers are anxious to have as many young bees and brood as possible, as these are the bees that will be most suitable for gathering a surplus from the White Clover and other sources. But what is the condition of the weather during May? Taking one season with the other, cold sunless days have been the rule rather than the exception of late years, and instead of a queen laying the above number of eggs probably an average of 500 per day has been nearer the mark. This is no imagination; we have proved it many times, and contend that a hive holding ten standard frames affords ample space for the queen's laying powers at that season. Should the weather be exceptionally fine, and the brood nest is found to be crowded with bees, four or five of the frames of brood are removed into the super and their places filled with frames of fully drawn-out combs or foundation, as advocated in previous notes, and it will not be necessary to introduce any more bees from another colony.

When a hive is in this condition and does not receive attention at the right time, the stock will prepare for swarming. This proves the hive is not large enough, and fully illustrates what we have often endeavoured to show—that it is of little consequence what is the size of the frames or the shape of the hive if the bees have proper attention when they require it.

USING OLD COMBS.

Are old combs detrimental for storing a surplus? and is the flavour of honey affected thereby when they are used in the supers for storing a surplus? Personally we look on clean tough old combs as our sheet anchor. "G. H." says, "To my palate honey has the richest aroma that is taken from virgin combs, or from combs that have not contained brood." In theory this may be the case, but in practice it is not so. Bees will not store honey in the comb until the latter is in the right condition for receiving it. We very much doubt if "G. H." could detect the difference either in the flavour or appearance of honey obtained from clean combs that had previously contained brood, and virgin combs that may have been placed direct in the super.

We have often heard the same remark passed by bee-keepers and others who imagined they could easily detect the honey obtained from combs which once contained brood, but when given a practical test they found how difficult it was, and were more often wrong than right. The bees are too industrious and hardworking to store honey in anything but clean combs. They may be dark in colour, but the honey stored in them will be of spotless purity; and as a proof the aroma is good, and the colour and density all that could be desired, honey obtained from combs as above has gained high honours in strong competition.—AN ENGLISH BEE-KEEPER.

HOW TO MAKE A LARGE HIVE.

ON page 136 "Warwick" asks for information about making the large hive mentioned in a previous issue. I take it, from the first question asked by "Warwick," that the hives are for a bee house. That being the case it will be a very easy matter to make them. First procure some well seasoned $\frac{5}{8}$ deal. Make the side pieces first, which are 19½ inches long by 10½ inch deep; next make the end pieces, which are 18½ inches long by 8½ inches deep. Nail these four pieces together, and you have a hive 18½ inches square, inside measure. It will be noticed, now, that the back and front of the hive is $\frac{1}{8}$ lower than the sides; this forms a $\frac{1}{8}$ lip for the frame ends to rest on. Next nail a plinth of $\frac{1}{2}$ -inch wood, 19½ inches long by 1½ inch deep, for the frame ends to butt against, and to keep in the heat. This plinth will make the ends the same depth as the sides. This hive takes twelve frames. The extra $\frac{1}{2}$ inch in the hive allows $\frac{1}{4}$ of an inch more room to the two outside combs, and makes it easier for the bee-keeper to admit the bees to the supers by the sides of the hive only. A plinth at the sides and back to drop over the sides of the floor-board, as in the case of hives that take standard frames, will make it warmer. The floor board can be made of $\frac{1}{2}$ -inch matchboards, to fit easily within the plinths, and if these are nailed on a batten of $\frac{3}{4}$ -inch and 2 inches broad it will prevent them twisting. Inside the bee house the floor projects about 3 inches. The entrance should be at least 7 inches long, but not more than $\frac{3}{4}$ deep.

FRAMES.

The top bar is 19½ inches long, $\frac{5}{8}$ inch deep, and 1½ inch wide. The side bars are made of $\frac{1}{2}$ inch wood, 8½ inch long, and 1½ inch wide; the bottom bar is 18 inches long and a $\frac{1}{4}$ inch thick, and 1 inch wide. When put together they form a frame of 18 inches by 9 inches outside measure. A groove, $\frac{3}{8}$ of an inch deep and $\frac{1}{8}$ wide, is run out by a plough down the centre of the under side of the top bar. The foundation to be fixed in this groove with melted wax. Make a lug $\frac{3}{8}$ wide, 1½ inch long, and the same depth as the top bar; put one of these on the right hand end of the frame, another on the left, these will keep the frames the proper distance apart. I prefer the frames to hang at right angles to the entrance.

SUPERS.

These are the exact counterpart of the hives, with the exception that they are only 6 inches deep, and the top bar is made of $\frac{1}{2}$ inch wood instead of $\frac{3}{4}$. The frames for the supers are 18 inches by $5\frac{1}{2}$ inches outside measure. Ten frames are used for the supers spaced at equal distances apart; this arrangement gives wider combs, which are so much easier to extract. Supers like those used in hives to take standard frames may be used. Those I have in use are 6 inches deep, made of $\frac{1}{2}$ inch wood, $14\frac{1}{2}$ inches by $15\frac{1}{2}$ inches inside measure, taking a frame $14\frac{1}{2}$ inches by $5\frac{1}{2}$ inches outside measure. A cover for the hive is made of $\frac{1}{2}$ inch wood, and 6 inches deep; the side pieces are $20\frac{3}{8}$ inches long, the end pieces $18\frac{1}{2}$ inches long; if a $1\frac{1}{2}$ inch plinth is nailed round this cover, the plinths having a rabbet $\frac{1}{8}$ inch deep taken out by a half plough, to make them fit easily over the sides of the hive, a flat top completes the hive. It is not absolutely necessary to have this cover, but it protects the hive top from mice in winter and wasps in summer. If a chaff cushion is placed in this cover it will make the hive snug and warm in winter, and the supers cool in summer. In a previous issue "Warwick" asked what hive I most recommended. After considering all things, including going to the moors, wintering and forwardness in spring, I have no hesitation in recommending the above.—GEORGE HOWDEN-SHIRE.



* All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **8. Rose Hill Road, Wandsworth, S.W.**, and **NOT** to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Book (F. C.).—If you will send your full name and address we will at once send you the desired information.

Seedling Fig Trees (H. S.).—Seedling Fig trees are a long time before they come into bearing, we having raised a considerable number with a view to securing improved varieties, but they were very unsatisfactory as regards showing fruit, and also as to that when produced. Fruiting was accelerated by raising plants from cuttings of the seedlings. For producing fruit for home use or market "seedling Fig trees" are of no use whatever.

Orchid Book (E. K.).—The full title of Messrs. J. Veitch & Sons' work on Orchids is "Manual of Orchidaceous Plants." It is published by the firm, and may be procured from Chelsea, very neatly bound in two volumes, for 5 guineas; or certain parts may be procured, for particulars of which see the firm's seed catalogue. It is one of the most complete and valuable works on Orchids with which we are acquainted.

Peach Shoots and Dead Buds (Cotterell).—Of the nine parts of Peach tree shoots eight are dead in the last year's wood, the two-years wood of one shoot being living, indeed it was the only shoot containing both one and two years growth; the other shoot is quite green, unripe in the wood, and "dead" in the buds. The tree has evidently been badly infested with scale, and dressed with a substance which killed the shoots. The green shoot has not been treated, the white parts are where the scale has been. There are no fungoid growths of any kind, the whole mischief to the wood being caused by the article used to kill the scale, which it has done very effectually, also the Peach tree wood as stated. The buds, however, on the green or live shoot, could not possibly have borne fruit, and perhaps those in the others were in a similar condition before the wood was killed. We can advise nothing but to cut away the dead parts, such as those you forwarded, and thus induce fresh growth from the sound living wood, but probably the tree or trees will scarcely be worth the trouble and delay. Of this, however, you ought to be capable of judging.

Dendrobiums (W. J. P.).—The misdirected parcel only reached us as we are preparing for press. The flowers shall have attention.

Tomato Leaf (Wakopa).—A leaflet 2 inches long and 1 inch broad, withered through being wrapped in dry paper, is entirely insufficient for examination. If you send several leaves packed in a small box with green grass, or something to keep them fresh, they shall be carefully examined. The fragment is excessively flimsy, but whether this is the result of the dry paper absorbing the moisture from it we cannot tell. For hints on packing see the paragraph below headed "Names of Plants." Post specimens on Friday if you can to the address in black type at the head of this column. Sending to Fleet Street involves re-posting, and consequently delay. Mention the temperatures in which you are growing the plants.

The Cucumber Tree (J. S. R. F.).—On previous occasions we have said that this is the popular name applied to *Averrhoa Bilimbi*, a native of Goa and other parts of the East Indies, and is now cultivated in South America. The tree is only 8 feet high, and produces a beautiful green, smooth, fleshy fruit, of the size and shape of a small Cucumber. Rheede says that the fruit when ripe is excellent to eat, but when unripe they are preserved with sugar, or vinegar and brine, and although it should be of an agreeable acid flavour when ripe, yet before they are ripe they are excessively sour. Burman says they contain a grateful acid juice, from which a syrup is made, and a conserve of the flowers, which are esteemed excellent in fevers and bilious disorders. Rumphius seems to think that, even when fully ripened, the fruit can never be eaten raw, but is only used to cook fish, fowl, and other viands, to give them an agreeable acidity, in the same way as we use sorrel and verjuice; they are pickled in brine and eaten as we do olives or capers in conjunction with meats; and preserved in sugar, or with a little saffron, they are recommended to be eaten by those who go sea voyages.

Rust on Chrysanthemum Cuttings (J. V.).—Yes, the leaves are infested with the *Chrysanthemum* leaf-rust fungus (*Uredo Chrysanthemi*), the pustules being very large, and for the most part confined to the under side of the leaf; but there were a few on the upper surface, showing that the germinal tubes from the spores can penetrate through either side when grown relatively soft, as cuttings usually are from the closeness and moisture essential to secure rooting. You will be doing wisely to keep the affected plants from the other stock, and also to wash every leaf with a solution of sulphide of potassium, $\frac{1}{4}$ oz. to a quart of water, applying by means of a sponge, so as to insure the solution coming into contact with the spores in the pustules. The plants should also be dusted from time to time with a fungicide, containing sulphate of copper, in powder on both surfaces of the leaves as made, but this must be done early as a preventive, for with ripe spores in abundance on the older leaves, as in your case, they infest others whilst quite young, but the pustules do not appear until a later period. You must, therefore, kill the spores present, and, as the pustules burst, those following, in order to effect a clearance from the pest, adopting both the preventive and repressive treatment.

Chemical Manure (Chas., Lincoln).—Judging from the guaranteed analysis the manure should be a powerful one, or what is generally termed stimulating, and also of a substantial nature for Vines, Peaches, and Strawberries, using it at the rate of 2 to 4 ozs. per square yard, the larger amount as a first dressing in the spring or at starting, and the other at intervals of about six weeks during growth. Being of an organic nature in the matter of phosphates and ammonia, the manure will prove, or should, of a durable character, hence affording nutrition steadily as the plants require the respective elements—indeed, it is an excellent manure, according to the tests we have subjected it to, and would be very suitable for *Chrysanthemums*, either mixed with the soil in small amount, say, a good handful to a bushel of soil, or applied as a top-dressing in moderate quantity, or at the rate of 2 ozs. per square yard. It is important not to overdo the dressing, especially when applying to plants that have the roots near the surface, and to always exercise judgment in application as indicated by the growth of the plants. It will both "force" weakly things, and also afterwards "encourage steady growth." You may find "The Chemistry of the Garden" useful, as it treats largely on manures and their application.

Ferns from Spores (Fern Lover).—Several of the finest Ferns cannot be increased by division; or, if they can, several years elapse. If right means are followed, they may be raised from spores. This requires a constantly humid warm atmosphere, and little, if any, sunshine. Procure a wide earthen pan, a hand or bell-glass that will go within it and rest on the bottom, and a shallow wide pot, that will stand within the glass and above the rim of the pan 2 inches or 3 inches. Fill this pot half full of potsherds, and upon them sufficient turfy peat, mixed with small pieces of sandstone, about the size of small peas, to come up to the top. Then take the frond of any Fern that is full of spores or seeds, and, with the hand, brush them off upon the prepared pot, set it in the pan, place the glass over the pot, and fill the pan nearly with water. Place the pan in the warmest part of the stove, shading it from the sun. The small pieces of turf and stone can be easily separated, and the seedlings on each put into small pots, without any danger of destroying them by the process of removal. In the moist atmosphere of the Orchid house several species of Fern will come up spontaneously in the pots, baskets, and upon the blocks. These may be carefully detached as soon as they are large enough, and placed in small pots. If kept for a time in a shady situation they will soon make good bushy plants. Ferns require a light open soil. A compost of sandy fibrous peat two parts, turfy loam one part, and leaf mould one part, with a free admixture of sand, will suit them well.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens. Whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. (Evans). 1, Bramley's Seedling; 2, Wyken Pippin; 3, Catshead; 4, D'Arcy Spice; 5, Winter Nelis; 6, Olivier de Serres. (Dispter).—Your friend is certainly wrong. The Apple is not Winter Hawthornden, but Bramley's Seedling without a doubt.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (Subscriber).—Each of the Cattleyas is a form of Trianae, and none of them has had a specific varietal name. There are many superior forms in commerce. The other specimen is Pergularia odoratissima. (E. M. C.).—1, Adiantum cuneatum grandiceps; 2, Asplenium bifforme; 3, Lomaria gibba; 4, Prunus Pissardi; 5, Pyrus (Cydonia) japonica. (R. B. R.).—1, A good form of Cattleya Trianae; 2, Sparmannia africana. (A. V. B.).—1, Staphylea colchica; 2, Acacia dealbata; 3, Saxifraga ceratophylla. (Single W.).—Your package was crushed flat when it arrived, and the specimens were quite dead. Send fresh ones properly packed and correctly addressed, in accordance with the instructions at the head of this column, and we will gladly assist you. (Pen and Ink).—Specimen much dried through delay in delivery, consequent on being incorrectly addressed. It is probably Veronica speciosa.

TRADE CATALOGUES RECEIVED.

R. A. Bath, Ltd., Wisbech.—*Florists' Flowers.*
W. Clibran & Son, Altrincham.—*Farm Seeds.*
Z. Coleman, Sandwich, Kent.—*Seeds.*
Cooper, Taber & Co., Ltd., Southwark Street, London.—*Wholesale Farm Seed List.*
E. P. Dixon & Sons, Hull.—*Farm and Garden Seeds.*
Ellwanger & Barry, Rochester, U.S.A.—*Novelties.*
A. Hart & Sons, Guildford.—*Seeds.*
Hogg & Robertson, 22, Mary Street, Dublin.—*Farm Seeds.*
Kent & Brydon, Darlington.—*Farm Seeds.*
E. H. Krelage & Son, Haarlem.—*Novelties in Plants.*
Toogood & Sons, Southampton.—*Farm Seeds.*
Vilmorin, Andrieux & Co., Quai de la Mégisserie, Paris.—*Chrysanthemums.*
T. S. Ware, Hale Farm Nurseries, Tottenham.—*Hardy Perennials, Florists' Flowers.*
B. S. Williams & Son, Holloway.—*Seeds.*

COVENT GARDEN MARKET.—MARCH 16TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1	6 to 4	0	Grapes, lb....	2 0 to 3 0
Cobs ...	21	0	2 6	Lemons, case ..	11 0 14 0
Filberts, 100 lbs. ...	0	0	0 0	St. Michael's Pines, each	2 6 5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
B.ans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz.	1 0	0 0	Parsley, doz. bnchs....	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz.	1 0	0 0
Cauliflowers, doz ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle....	1 0	0 0
Coleworts, doz. bnchs.	2 0	4 0	Scorzonera, bundle ...	1 6	0 0
Cucumbers... ..	0 4	0 8	Seakale, basket....	1 6	1 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 9
Mushrooms, lb.	0 6	0 8	Turnips, bunch....	0 3	0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.		
Arbor Vitæ, var., doz. ...	6	0 to 36	0	Ferns, var., doz. ...	4 0 to 18 0		
Aspidistra, doz. ...	18	0	36	0	Ferns, small, 100 ...	4 0	8 0
Aspidistra, specimen ...	5	0	10	6	Ficus elastica, each ...	1 0	7 0
Azalea, per doz. ...	24	0	36	0	Foliage plants, var., each	1 0	5 0
Cineraria, per doz. ...	6	0	10	0	Hyacinths, doz. pots ...	8 0	12 0
Cyclamen, per doz ...	9	0	18	0	Lilium Harris, doz. ...	12 0	18 0
Dracæna, var., doz. ...	12	0	30	0	Lycopodiums, doz. ...	4 0	6 0
Dracæna viridis, doz. ...	9	0	18	0	Marguerite Daisy, doz. ...	6 0	9 0
Erica hyemalis, per doz ...	9	0	15	0	Myrtles, doz. ...	6 0	9 0
„ gracilis, per doz. ...	6	0	9	0	Palms, in var., each ...	1 0	15 0
„ various, per doz. ...	8	0	12	0	„ specimens ...	21 0	63 0
Euonymus, var., doz. ...	6	0	18	0	Pelargoniums, scarlet, doz.	4 0	6 0
Evergreens, var., doz. ...	4	0	18	0	Tulips, various, doz. bulbs	0 9	1 6

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2	0 to 4	0	Mimosa or Acacia, bunch	
Arum Lilies, 12 blooms ...	2	0	3	(French)	0 9 to 1 0
Asparagus, Fern, bunch...	1	6	4	Narciss, white (French)	
Azalea, dozen sprays ...	0	4	0 8	dozen bunches	2 6 5 0
Bouvardias, bunch ...	0	6	0 9	Orchids, var., doz. blooms	1 6 12 0
Carnations, 12 blooms ...	1	0	3	Pelargonium, doz. bunchs.	6 0 9 0
Daffodils, doz. bunches ...	3	0	8	Primroses, doz. bunches...	0 9 1 0
Eucharis, doz. ...	3	0	5	Roses (indoor), doz....	0 6 1 0
Euphorbia jacquiniæflora,				„ Red, per doz.	3 0 5 0
per bunch ...	1	0	2	„ Tea, white, dozen ...	1 0 2 0
Gardenias, doz....	4	0	6	„ Yellow, doz. (Perles)	1 6 4 0
Geranium, scarlet, dozen				„ Safrano (English doz.	1 0 2 0
bunches	4	0	6	„ Pink, dozen	4 0 8 0
Hyacinths (Roman) dozen				Smilax, bunch	1 6 2 0
bunches... ..	4	0	6	Snowdrops, 12 bunches ...	0 9 1 6
Lilac (French), bunch ...	3	0	4	Tuberose, 12 blooms ...	0 9 1 6
Lilium longiflorum, 12 blms	4	0	6	Tulips, dozen blooms ...	0 6 1 0
Lily of the Valley, 12sprays	0	6	1 3	Violets, dozen bunches ...	0 6 1 0
Maidenhair Fern, dozen				„ Parme (French),	
bunches	4	0	8	bunch	3 0 4 0
Marguerites, doz. bunches	2	0	3	Wallflowers, doz. bunchs...	3 0 5 0
Mignonette, doz. bunchs. ...	2	0	4		



EXPERIENTIA DOCET.

THESE few notes on an egg incubator are from a lady friend. We thought they might be interesting to other poultry raisers.

The impossibility of getting hens which are early and constant layers to sit has been my trouble for some time. Even if I get, as I have done several times, a sitting of eggs from old-fashioned broody hens, either most of the eggs produce cockerels, or the few pullets from the force of bad example object to do the very thing I want of them. Spring after spring have I scoured the country to beg, buy or borrow sitting hens. Sometimes it answers, but as a rule the journey home and the new surroundings all act as a charm, and the most broody hen rarely gives a glance at the eggs. She has been induced to "mother," but on the first chance breaks away and rejoicingly joins her feathered friends in the yard.

As it is a certainty that only early chickens pay, and that late pullets spend a most unprofitable winter, I arrived at the conclusion that, come what might, an incubator I must have. Fortune favoured me. Through the kind offices of a friend I became the lucky possessor of a 100-egg Hearson, in first-rate condition, for the modest sum of £3. These machines new are catalogued at £10. With it were a double set of thermometers, egg testers, and other sundries.

Circumstances over which I had no control prevented my starting the work till January 6th; on that day I filled the copper tank, trimmed the lamp, and anxiously waited results. For successful incubating the drawer tube may register from 104° to 105°, the tank tube 145°. Of course the temperature of the room has to be considered, but with the aid of the book sent out with the machine the beginner soon sees the way quite clearly. The machine soon registered the proper degree of heat, and continued perfectly steady till the evening of January 8th, when the eggs were committed to the drawer. I could not fill the drawer, but put in all that I had, big and little, after having marked them with the date (January 8th).

I had no difficulty whatever with the lamp. The great point is careful trimming and cleaning, and freedom from dust in the perforated parts. It is a wise plan to have a stated time to attend to these little matters, and I do not suppose I vary in my visit to the incubator room ten minutes a week. The machine is in a great bedroom (unused, of course) facing south. Every morning the eggs must be turned and cooled. The time varies from ten to twenty minutes, according to the weather and the stage of incubation.

There is a water tray below the egg drawer, containing perforated zinc covered with a coarse piece of canvas; this must be kept well wetted to supply the necessary moisture to the eggs. Now I read in my book that once a week it would be well to thoroughly scald tray and cloth, to kill any bacteria there might be, so with my kettle of water I proceeded to business; returning the tray immediately to its position below the eggs, I closed the drawer and left.

In about two hours' time I was in the room for some purpose, and to my horror saw the drawer tube stood at 114.1°. The eggs were in a bath of perspiration, and I perspired too. For days the thought haunted me, "had I steamed the innocent embryos to death?" The sequel proved I had done no harm. About the testing on the seventh day. Book in hand I set to work, but so afraid was I of erring on the wrong side that many of the eggs were marked X to denote doubtful. At the fourteenth day I was better up to my work, or rather, perhaps, the eggs, being more advanced, showed themselves more clearly. Now I do not think I should make a mistake of more than 2 or 3 per cent. Those that we removed were perfectly clear and apparently fresh, but I feel sure that some had been subjected to several degrees of frost before being placed in the incubator. This did not strike me at the time, but remembering that all eggs are placed close to a dairy window, which is never shut day or night, I think this fact might account for some failures.

On the evening of the twentieth day there were voices to be heard, and on the twenty-first the drawer presented a lively spectacle. A 100-egg machine is fitted with a drying box, into which the little chirpers were at once placed. A bit of sand makes a clean wholesome flooring. No food should be given for at least twenty-four hours, when the birds will be ready for removal to another sphere. A proper foster mother is costly, so my wits were set to work, and a nice little loose box was rigged up over the hot-water pipes in a greenhouse; the floor was for the most part dry earth, and the plants those homely ones that do not need much water in winter.

Here the chickens lived and thrived, sitting at nights and during dull parts of the day between the hot pipes. A small hole was made out of the greenhouse on to the lawn facing south, and a wire feeder put in front to prevent wanderers straying too far. In this way the birds were hardened till ready to go out to grass (literally), and their refuge then from the night air was a rough box, with a guarded stable lamp in the middle—plenty of ventilation. A friend had lost many chickens by too much coddling; they had what I fancy might correspond to black-leg in calves. They did too well, and were kept too hot.

Now as to food. The first was the rejected egg of the incubator boiled hard, chopped up shell and all, and mixed with fine meal; then all sorts of kitchen bits, and all the milk I could come at; green meat in the shape of parsley, and the trimmings of broccoli boiled; and once or twice a day a handful of small dry rice. Some people advocate little or no drink, but I find chickens will greedily take to milk, and surely Nature is a fairly good guide. There is one little hint to the amateur—do not be in too great a hurry to help the chick out of the shell. Too much interference is fatal. If the skin appears hard and like parchment, I had found it a good plan to hold the egg in warm water; but as a rule those chickens that cannot get out of themselves are never worth much. They are weak in vitality, and the first bit of adversity is too much for them.

These are the chickens that in old days I should have said the careless hen had killed. She is wiser than we, and believes only in the survival of the fittest. I may say, in conclusion, that my common mixed barndoor fowls gave me much better results in the form of

chickens than the well bred fancy eggs I bought. My failures worked out to about 16 per cent., the others to about 60 per cent. Need I say any more?

I mention the failures of the pure strain eggs, because as lately as Saturday last I read some remarks by an eminent Shire horse breeder on the desirability of good sires. He alluded to the supineness of farmers (English) in the poultry yard, and advised the purchase of pedigree cockerels. Now, after much anxious consideration, I have several times been led to the purchase of a first-class bird, only to mourn his premature decease, and in the matter of eggs I think my late experience has been anything but gratifying, the most unsatisfactory being purchased of a man who is a prizewinner, and who fancies himself not a little as a poultry raiser, and the head attendant in the above mentioned gentleman's stud.

WORK ON THE HOME FARM.

Seed time and harvest, summer and winter. So go the seasons, year after year, and Barley seed time is at our door. Barley is a ticklish crop, bad to deal with, and needing attention all the way throughout its career. You are never assured of your success till the maltster's cheque has been acknowledged by your banker. Like other grain, or perhaps more so, the seed has been much improved, and we speak advisedly when we recommend a liberal policy in buying the seed. If Pedigree straight from the raiser cannot be afforded, there are always some farmers more enterprising than their neighbours, and from them good seed may be obtained, second-hand as it were.

Still it is curious, with all the named varieties, to find what a strong hold Chevalier has on our affections. Perhaps it is because it is so well suited to medium and poor soils (we do not all have tip-top Barley land), and also because it may be sown any time.

"Stand well" for real early sowing, and on the land that produces the heaviest crop, is what we should recommend; but the custom of the country is an excellent guide, both as to varieties and time of sowing. March, with its pecks of dust, seems in the course of things the legitimate Barley month. Of course, we have seen March when there was absolutely no suitable seed bed, but as a rule we may depend on the drying winds doing their share of the work. We are always in favour of an early seed time, for in nine cases out of ten the early sown crop proves the best.

It is of the greatest importance that the sheep should have been folded evenly on the previous root crop. A good Turnip shepherd understands his duty, but the master's eye is very necessary. We have so often been able in our experience to trace in Barley fields any neglect of this sort.

It is possible, too, that the land may be made too good—i.e., by the lavish use of cake. If a heavy rain or wind storm comes about the end of June or early July down goes every head, the straw being too long, weak, and sappy. Then, again, it is possible to overdo the seed. Plants must have room for development, and with a good seed bed underneath the Barley will always do its share. We have talked of an early spring and "forrad" season. The migratory birds do not say so. They have come to us at least a fortnight after their usual date, and birds are better weather prophets than most of our savants.

We have been surprised to learn that we are recommended to use the light two-horse drill in place of the cumbersome machine that required four horses. Now, is not this advice a bit late in the day? We have not met with such a drill for many a long day; indeed, we expected all such had long ago been broken up for the sake of what old iron they contained and the rest used as "kindling."

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1898. March.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.			
		Dry.	Wet.			Max.	Min.	In Sun	On Grass		
	inchs	deg.	deg.		deg.	deg.	deg.	deg.	inchs.		
Sunday	6	29.762	37.2	33.8	E.	37.7	42.1	27.8	61.1	22.6	—
Monday	7	30.022	37.0	32.6	N.	37.0	44.2	28.9	85.3	23.1	—
Tuesday	8	30.030	35.9	32.8	N.E.	36.9	40.1	32.8	47.2	23.2	—
Wednesday ..	9	30.135	39.1	36.3	N.	36.9	44.9	36.1	57.8	33.0	—
Thursday ..	10	30.250	36.3	34.1	N.	37.7	48.9	31.1	81.9	26.6	—
Friday	11	30.241	35.7	34.9	N.	37.7	47.1	32.1	77.6	26.8	—
Saturday	12	30.055	38.0	36.4	N.E.	37.9	42.6	35.9	51.0	28.0	—
		30.071	37.0	34.4		37.4	44.3	32.1	66.0	26.9	—

REMARKS.

- 6th.—Fine and pleasant, but no very bright sunshine; clear night.
 7th.—A little sleet early; brilliant from sunrise to noon; cloudy after, and slight snow after 3 P.M.; overcast evening.
 8th.—Bleak, windy, and overcast day; bright sunset.
 9th.—Overcast day; gleam of sun towards sunset.
 10th.—Brilliant morning; fair afternoon, with a little sun after 4 P.M.
 11th.—Overcast morning; fair afternoon, with occasional sunshine.
 12th.—Overcast morning; fair afternoon; fine night.
 Another cold week, temperature very uniform, and no rain.—G. J. SYMONS.

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COCKSCOMB, WILLIAMS' PRIZE	2/6
CELOSIA PLUMOSA, CRIMSON	1/-
" AUREA	1/-
CLERODENDRON FALLAX	2/6
CALLA ELLIOTTIANA	2/6
CALCEOLARIA, WILLIAMS' SUPERB	1/6, 2/6, 3/6, 5/-
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" ROSE QUEEN	2/6, 5/-
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" FINEST MIXED	2/6, 5/-
GLOXINIA, SUPERB SCARLET	2/6
" ERRECT, MIXED	2/6
" SPOTTED	2/6
GONVILLE STRAIN	2/6
PRIMULA, MAGNUM BONUM	3/6, 5/-
" SNOWBALL	3/6, 5/-
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" CHISWICK RED	1/6, 2/6, 3/6, 5/-
" METEOR	2/6, 3/6, 5/-
" SUPERB BLUE	2/6, 5/-
" WHITE	1/6, 2/6, 3/6, 5/-
" RED	1/6, 2/6, 3/6, 5/-
" MIXED	1/6, 2/6, 3/6, 5/-

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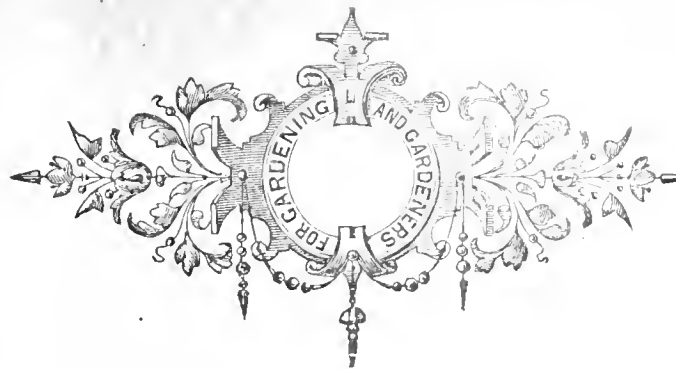
DUTCH BULBS.—J. J. THOOLEN, Bulb and Plant Grower, OVERVEEN, near HAARLEM, HOLLAND, has the honour to inform that his Illustrated Price List in English, Spring, 1898, is ready, and will be sent free on application. No charges for packing. Orders of 10/- and above entirely free to destinations in England, Scotland, and Ireland, &c. Lowest prices; first quality guaranteed.

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Journal of Horticulture.

THURSDAY, MARCH 24, 1898.

THE JOURNAL OF HORTICULTURE can be obtained from the Office, 12, Mitre Court Chambers, Fleet St., London, post free for a Quarter, 3/9. Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.

DAHLIA ANALYSIS, 1883-97.

THE exhibition of the National Dahlia Society, which took place at the Crystal Palace in September last, was the largest the Society has yet held. It was not only in one or two sections that there was an unusual number of exhibits staged, but in nearly every section the classes were well filled. The growing season of last year, although again very dry, was not nearly as warm as in the same three months, May, June, and July, of the previous year, which no doubt made it less trying to the young plants. The cooler weather of August, and the frequent rains which fell during that month, caused the plants to make rapid growth; while September also proved very favourable. The most remarkable feature of the season, however, was the long period that Dahlias continued to grow and flower freely in those localities where they had been so fortunate as to escape the October frosts. Indeed, in many places excellent flowers were to be gathered even as late as the middle of November. In my own garden they passed through 5° of frost on the night preceding the 6th of October without the slightest injury, only to fall victims to 8° of frost on the following night. I could not understand this at first, as both nights were equally clear, calm, and dry, but afterwards found that the temperature on the first night had remained at its lowest point only about a quarter of an hour, whereas during the second night the greatest cold was steadily maintained for nearly six hours. The frost referred to completely destroyed the upper half of my Dahlias, and checked their flowering for the rest of the year; but they were not cut down to the ground until November 19th, which is eighteen days later than the average date of their destruction in the previous twelve years, and with the exception of 1894, the latest recorded here during that period.

The Shows and Fancies appeared in unusual force, reminding one of the exhibitions of ten or twelve years ago, when they formed the principal attraction of the exhibition. In fact we have to go back to 1888 in order to find these two sections, when taken together, as well represented. The

Pompons also appeared in unusual force, while the Cactus varieties have never before been as well or as numerous shown. The introduction of this popular type, and the great improvement that is being made in it year by year, has undoubtedly given the Dahlia a fresh lease of life as a flower, whether for exhibition purposes or for ordinary garden decoration, and has at the same time considerably added to the general interest in its cultivation.

The following short table will show the number of blooms and bunches set up in competition at the last five exhibitions of the National Dahlia Society, and will serve to confirm the remarks that have previously been made as to the extensive character of the last show held by the Society.

	1893	1894	1895	1896	1897
Shows (No. of blooms) ...	720	894	827	798	930
Fancies " " " " " " ...	270	301	287	276	312
Pompons (No. of bunches) ...	168	192	210	192	234
Cactus and Decorative (No. bnchs.)	264	246	280	220	432
Singles (No. of bunches) ...	128	138	102	126	116

In the above statement the number of flowers staged in the classes set apart for three or more blooms of any variety is not included.

It is now twelve years since Mrs. Gladstone assumed the lead of

the Show Dahlias in this analysis, and during the whole of that period its position as the premier variety has never been seriously threatened. At several exhibitions either John Walker or R. T. Rawlings have been more numerous staged, but the more consistent form of Mrs. Gladstone has enabled it to maintain the decided advantage it secured at the time of its first appearance over all its rivals. John Walker, owing to the comparatively small number of stands in which it appeared at the last show, has had to give up the second place on the list in favour of R. T. Rawlings, which was more largely shown than in any previous year—in fact, exactly the same number of times as the leading flower. William Rawlings and Mrs. Langtry, both very dependable varieties, were also unusually well shown. Among other varieties which were last year staged more frequently than usual may be mentioned Harrison Weir, Miss Cannell, Glowworm, Mr. Glasscock, and Victor.

On the other hand, we have to go back to the year of its introduction in order to find John Walker as poorly represented. Harry Keith, James Cocker, Ethel Britton, John Hickling, Willie Garratt, Henry Walton, Prince of Denmark, and Goldfinder, to say nothing of other varieties lower down on the list, were but indifferently shown.

SHOW DAHLIAS.

Position in Present Analysis.	Average Number of Times Shown.	No. of Times Shown in 1897 in True Relative Proportion to the Average.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	35.9	32	Mrs. Gladstone	1884	Hurst	Pale blush
2	26.7	33	R. T. Rawlings	1886	Rawlings	Clear yellow
3	26.0	16	John Walker	1892	Walker	White
4	24.7	26	William Rawlings	1881	Rawlings	Crimson purple
5	23.4	26	Mrs. Langtry	1885	Keynes	Cream and crimson
6	23.0	22	Colonist	1887	Keynes	Chocolate and fawn
6	23.0*	23	Duchess of York	1894	Keynes	Lemon, edged salmon pink
8	22.5	17	Harry Keith	1886	Keynes	Rosy purple
9	19.7	19	J. T. West	1887	Rawlings	Yellow and purple
10	18.0	15	Arthur Rawlings	1892	West	Deep crimson
10	18.0*	18	Shotesham Hero	1895	Fellowes	White, tipped and shaded rose
12	17.0	14	James Cocker	1871	Keynes	Purple
13	16.6	17	Maud Fellowes	1889	Fellowes	Pale pink, shaded purple
14	16.2	17	Duke of Fife	1890	Keynes	Rich cardinal
15	16.1	7	Ethel Britton	1880	Keynes	White and purple
16	15.8	11	John Hickling	1890	Keynes	Clear bright yellow
17	15.6	12	Willie Garratt	1887	Garratt	Bright cardinal
18	15.2	11	Henry Walton	1873	Keynes	Pale yellow and scarlet
19	15.0	18	Harrison Weir	1883	Rawlings	Yellow
20	14.9	14	Mrs. W. Slack	1886	Keynes	Blush white and purple
21	14.5	14	William Powell	1892	West	Primrose yellow
22	13.3	13	Shirley Hibberd	1881	Rawlings	Dark crimson
23	13.0	15	Miss Cannell	1881	Eckford	Cream and crimson
24	12.6	11	T. J. Saltmarsh	1885	Rawlings	Yellow and chestnut
25	11.8	9	Arthur Ocock	1892	Rawlings	Reddish orange
26	11.4	9	Prince of Denmark	1881	Fellowes	Dark maroon
27	10.0*	10	Chieftain	1894	Keynes	Purplish lilac
27	10.0*	10	Florence Tranter	1896	Tranter	Blush white, edged rosy purple
29	9.9	9	Hon. Mrs. P. Wyndham	1881	Keynes	Pale yellow and rose
30	9.8	8	Majestic	1890	Keynes	White, edged purple
31	9.1	9	George Rawlings	1882	Rawlings	Dark maroon
32	8.9	5	Goldfinder	1881	Fellowes	Yellow and red
33	8.7	10	Glowworm	1889	Turner	Bright orange scarlet
33	8.7	6	Mrs. D. Saunders	1888	Rawlings	Pale, edged rose
35	8.7	8	Mrs. Morgan	1893	Fellowes	Pale ground, tinted rosy purple
36	8.1	10	Mr. Glasscock	1886	Rawlings	Purple
37	7.8	6	Alice Emily	1890	Keynes	Buff yellow
37	7.8	9	Perfection	1889	Fellowes	Orange buff
39	7.7	5	John Standish	1872	Turner	Crimson
40	7.6	7	Earl of Ravensworth	1883	Harkness	Lilac
41	7.5	11	Victor	1887	Keynes	Dark maroon
42	7.4	8	William Keith	1888	West	Dark plum
43	7.3	3	Burgundy	1877	Turner	Dark puce
43	7.3	7	Crimson King	1887	Keynes	Deep crimson scarlet
43	7.3	3	Queen of the Belgians	1887	Rawlings	Cream and pink
46	6.7	9	Prince Bismarck	1879	Fellowes	Puce
47	6.3	5	Joseph Ashby	1879	Turner	Shaded orange
48	5.5	8	Virginale	1893	Keynes	Blush white, edged pink
49	5.0	3	Norma	1894	Turner	Bright orange buff

* New varieties, the positions of which are dependant on their records at the 1897 show only.

Turning now to the newer kinds, those sent out during the last six years, we shall find that valuable new blood has been infused into this section during that period, and that no fewer than six of these new Show Dahlias are to be found among the first twenty-five in the table. The year 1892 is responsible for four of the sorts which are so placed. John Walker, although last season appears to have been very unfavourable to this grand white variety, occupies the third position on the list. Arthur Rawlings still remains at No. 10, while William Powell stands at No. 21, and Arthur Ocock at No. 25. The variety last named would occupy a higher position than it does but for its bad form at the two last exhibitions. The Show Dahlias sent out in 1893 have failed as yet to make their mark, Mrs. Morgan only taking a place at No. 35, while Virginale on its first appearance in the table will be found at No. 48. Duchess of York (No. 6), although only distributed in 1894, promises well, only four other varieties having been better staged at either of the last two shows; while Chieftain of the same year takes up an honourable position at No. 27. Norma, however, only manages to creep in at the end of the list. Shotesham Hero (No. 10) the only representative of 1895, was remarkably well shown, and, depending on its last year's form alone, stands higher in the list than any of the other new sorts, except John Walker and Duchess of York. 1896 is also represented by only one variety, Florence Tranter, which makes its *début* at No. 27.

The race for first place on the table of Fancies between those two veterans, Rev. J. B. M. Camm and Mrs. Saunders, which had been maintained for a number of years, may now be regarded as at an end. Previous to 1895 the latter held the lead, but since then Rev. J. B. M. Camm has been gaining steadily upon its rival, and at the last exhibition was staged oftener than at any other time during the fifteen years covered by the analysis, and also more frequently than any other Show or Fancy variety except Mrs. Gladstone and R. T. Rawlings. Surely this must be regarded as a remarkable performance considering Rev. J. B. M. Camm has now been in cultivation for exactly a quarter of a century. Both Duchess of Albany and Mrs. John Downie were unusually well shown, also Dorothy and Buffalo Bill. But comparatively few flowers were staged of Mrs. Saunders, Frank Pearce, T. W. Girdlestone, and Rebecca.

The newer sorts in this section, those distributed within the last six years, are few in number, and none of them occupy a higher position than No. 11. The only representative of 1892 is Comedian, which was poorly shown last year, and consequently falls from No. 9 to No. 12. Dazzler, sent out in 1893, remains pretty well as before, at No. 18. Of the 1894 varieties Emin Pasha rises from No. 14 to No. 11, while S. Mortimer (No. 14) has never been quite as well represented as during the first year after its introduction.

In the section devoted to those miniature Show and Fancy Dahlias known as Pompons, many of which are so admirably adapted for the purposes of garden decoration in the early autumn, the changes are much more rapid than in the two classes previously dealt with. For instance, of the twenty-five varieties named in the select list which follows, only about half the number were last year more than five years old. Of these, which may be termed the established varieties, Phoebe was more largely shown at the last exhibition than in any previous year. Whisper follows at some distance with a very steady record for the past eight shows. E. F. Junker has also proved itself dependable, although less frequently staged than formerly. Eurydice, on the other hand, has improved its position during the last five years. Isabel, Darkness, White Aster (Guiding Star), Favourite, Red Indian, Grace, and Mars appear, however, to be gradually declining in favour with exhibitors. The most striking advances made in the newer kinds, those sent out since 1893, are shown by Nerissa (1896), which rises from No. 7 to No. 2; while Emily Hopper, Douglas, Ganymede, Rosebud, and Sunny Daybreak all occupy good positions considering that they appear for the first time in the list at all.

There are still several Cactus Dahlias, which last year were more than two years old, that continue to hold their own among the newer sorts. For instance, Matchless again takes the premier position in this section, having been staged more frequently than any other Cactus at the last three exhibitions; while Gloriosa, Lady Penzance, Delicata, Bertha Mawley, and Robert Cannell are also to be found among the first twelve on the list. If we take the Cactus Dahlias of more recent introduction in the order of their ages, we find that of the varieties sent out in 1895 Earl of Pembroke stands only second to the leading flower—Matchless. Harmony remains in its former position at No. 7, while Mrs. Barnes has fallen from No. 6 to No. 9. Fusilier (No. 5) takes the lead of the 1896 varieties, followed by Mrs. Wilson Noble at No. 8, Beatriee at No. 13, J. E. Frewer at No. 15, and Miss A. Nightingale at No. 20. Two of the sorts sent out in 1897 also find places on the list—viz., Starfish at No. 16, and Harry Stredwick at No. 19.

When we come to treat of the single-flowered varieties, the limited number of exhibits in this section is undoubtedly a drawback in placing them accurately. I have, however, treated them in precisely the same way as the Cactus varieties. Victoria still takes the lead, followed by W. C. Harvey, of the same year, 1889. Of the other established varieties Miss Roberts, Northern Star, and Amos Perry occupy the best positions; whereas the most prominent of the newer kinds, those sent out since 1893, arrange themselves as follows:—Demon, Phyllis, Beauty's Eye, Polly Eccles, The Bride, and Jack Sheppard.

FANCY DAHLIAS.

Position in Present Analysis.	Average Number of Times Shown.	No. of Times Shown in 1897 in True Relative Proportion to the Average.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	20.9	27	Rev. J. B. M. Camm	1873	Keynes	Yellow and red
2	18.7	11	Mrs. Saunders	1872	Turner	Yellow and white
3	17.7	20	Duchess of Albany	1884	Turner	Orange and crimson
4	17.0	19	Mrs. John Downie	1889	Turner	Orange and scarlet
5	14.7	13	Matthew Campbell	1889	Keynes	Buff and crimson
6	14.4	11	Frank Pearce	1886	Rawlings	Rose, striped crimson
7	13.8	6	T. W. Girdlestone	1890	Keynes	Lilac and maroon
8	12.7	15	Dorothy	1888	Keynes	Fawn and maroon
9	9.8	10	Peacock	1877	Turner	Maroon and white
10	9.6	11	Buffalo Bill	1890	Keynes	Buff, striped vermillion
11	9.5	11	Emin Pasha	1894	Keynes	Yellow, striped crimson
12	9.3	7	Comedian	1892	Keynes	Orange and crimson
13	8.6	6	Rebecca	1883	Keynes	Lilac and crimson
14	8.0	6	S. Mortimer	1894	Mortimer	Rose, striped crimson
15	6.8	4	Henry Eckford	1886	Rawlings	Yellow and red
16	6.7	6	George Barnes	1878	Keynes	Lilac and crimson
17	6.0	5	Dandy	1891	Keynes	Orange, striped crimson
18	5.0	3	Dazzler	1893	Keynes	Yellow, striped scarlet

In the following select lists the Pompons have been dealt with in a similar way to the Shows and Fancies in the tables. In the case of the Cactus and Single varieties, however, the average number of times they were staged at the last two shows alone governs their relative positions in the lists. Those marked with an asterisk are new sorts, the positions of which are dependant upon the number of times they were shown at the last exhibition only.

POMPONS.—Bacchus, Nerissa,* Phoebe, Tommy Keith, Arthur West, G. Brinckman, Captain Boyton, Whisper, E. F. Junker, Eurydice, Admiration, Isabel, Emily Hopper, Douglas,* Ganyinede,* Lilian, Rosebud*, Sunny Daybreak,* Darkness, White Aster (Guiding Star), Sunshine, Favourite, Red Indian, Grace, and Mars.

CACTUS.—Matchless, Earl of Pembroke,* Gloriosa, Lady Penzance, Fusilier,* Delicata, Harmony,* Mrs. Wilson Noble,* Mrs. Barnes,* Bertha Mawley, Mrs. Peart,* Robert Cannell, Beatrice,* Mrs. A. Beck,* J. E. Frewer,* Starfish,* Countess of Gosford, Juarezii, Harry Stredwick,* and Miss A. Nightingale.*

SINGLES.—Victoria, W. C. Harvey, Demon, Miss Roberts, Phyllis, Beauty's Eye,* Northern Star, Polly Eccles,* The Bride, Amos Perry, Jack Sheppard, James Scobie, Gulielma, May Sharpe, Miss Glasscock, Mrs. Wythes,* Duchess of Fife, Miss Henshaw, Mrs. Parrott, Rosebank Cardinal, and M.C.C.—E. M., *Berkhamsted*.

NAMES AND KINDS OF CARNATIONS.

(Concluded from page 234.)

THIS dynasty of Dutch Carnations bore sway from about 1680 till 1740, when they were suddenly dethroned by the introduction of French flakes, which were more generally known as Whole Blowers, because the flowers did not, like the "Bursters," burst open their pods. A split pod was, in fact, so much a fault that the more expert growers have been known to fill up the slit with a piece of green silk the same shade as the pod itself. A bloom 3 inches in diameter was considered a sufficiently large size. The petals were still serrated on the edges, but instead of being inflected, they were "plain and circular like the leaves (petals) of a Provence Rose." Hence these petals were called Rose-leaved. About 1780 the petals lost their "jagged" edges, and at the beginning of this century, from many coloured engravings, we know that the florists' Carnation had attained a condition of comparative perfection. The Mr. Pearson, of Chilwell, of that day, was a famous raiser of seedlings, and later, about the forties, Dr. Horner was a leading grower, and raised many fine varieties, including yellow Picotees. Self-coloured flowers are rarely heard of, though at some of the exhibitions prizes were offered for them. On the Continent many self-coloured flowers are noted, and in great variety, about the beginning of the century.

In cultural matters the old growers differed in some items from present day cultivators. For example, they layered their stock at the earliest possible moment. From the "end of June till the end of July" is recommended as the time to be preferred. Some cultivators of the present day have discovered that early layering is an important matter, and as its value as a factor in obtaining healthy plants becomes more generally recognised, no doubt the practice will become general. Then the old growers were most particular in putting down short growths only. One writer says "two joints" is sufficient; others agree that three, or at most four, is a proper number. But for bedding out there is nothing gained in taking short layers. So long as they are not *hard* I have no objection to their length, as the production of flowers from these is so much greater.

Another long-established usage was the removal of the tips of the foliage. Maddocks shows a layer ready for pegging down, every leaf of which is cut hard in. It is a practice, so far as my experience goes, more honoured in the breach than the observance. Then the composts! Hogg's is five of loam, ten of horse manure, one of coarse sand. A hundred years earlier two of loam to one of neat's manure was the proportion. Glenny, who was Hogg's rival, employed a compost much like the last. No wonder the plants were often unhealthy and difficult to keep!

It is a curious fact, that from the earliest notices we have of the Carnation onwards till the present day, the "finest" sorts have been cultivated in pots, and protected during the months of winter. Dryness, both at the root and in the atmosphere, has also been considered essential, alike to the health of the plants as well as for the ripening or maturation of the stems for flowering strongly. Early spindling, through exciting treatment, is fatal to success. This has always been guarded against, and it can only be assured by dryness

and coolness, or, when grown in the open, by reducing to the lowest limit the chance of moisture doing harm.

The question of scent in Carnations is one that has always, or at least for a very long period, exercised lovers of this flower. The old-fashioned plan of "laying bruised Cloues round about their rootes" was simplicity itself; but though assured that this was a certain method to "make Gilliflores smell like Cloues," who nowadays so bold as put it to the test? As a matter of fact it was only a few varieties among many that at any period were possessed of the true "spicey" scent of Cloves; such, for instance, as we find at present in the old Malmaison or in Buccleuch Clove.

It was assumed by some that a deep red colour, whether the flower was a self or the colour laid on in stripes or in spots, was essential to any variety yielding the true Clove scent. When, however, we can turn to Lady Nina Balfour or to Mons. Magny as examples of flowers without any trace of crimson possessing a Clove scent, it will be seen that crimson is not essential. A point worthy the attention of raisers is whether it is well to discard every flower that does not reach the standard that for so long has been received as the one to aim for. Lady Nina Balfour, if treated with the severity due to her ragged petals, would on no account be grown, nor would Ruby, Vivid, Alice, nor even Duchess of Fife. The truly wonderful changes which the Carnation has, under the hands of enthusiasts, passed through, are warrant that we may yet have our gardens rich in Gillyflowers perfect in habit of growth, free-flowering, and in not a few with the Clove scent fully developed.—R. P. BROTHERSTON.

COUNTY COUNCIL TRIALS IN SURREY.

HAVING recently noticed what is being done in Worcestershire in the matter of fruit and vegetable trials, there can be no harm if I briefly refer to those which will be conducted in Surrey this year. We have no central garden. We rather prefer to play the part of Mahomet and go to the mountain, or in other words the people interested in garden trials. These are specially, though not absolutely, the allotment holders. For that reason our trial grounds are ordinary allotment plots situated in prominent positions on groups of allotments, four in number, in different parts of the county. In such positions the allotment holders can see, from sowing and planting till the clearing of the crops, all that takes place, and as every separate crop or variety is legibly named, each person may be as wise as those who cultivate and crop.

The chief trial plot this year will be that at Surbiton. This is on one side of the main entrance to the District Council's fine area of some 200 plots, all let, and generally well cultivated. We see in this area how allotments are appreciated. The trial plot is faced along beside the entrance road with a neat flower border 3 feet wide, now planted with a fine lot of seedling Carnations raised from Mr. J. Douglas's strains, also with Pansies, Polyanthus, white Columbines, and other hardy plants, and there will presently be sown also annuals to furnish additional summer beauty. The ground behind is about 27 feet wide, and having been trenched the previous winter, and well manured, has lately been dressed with lime sludge from sewage works, then deeply dug, and later farther dressed with superphosphate of lime and kainit at the rate of 4 lbs. per rod. Twenty of the leading varieties of Potatoes, several being quite fresh, will shortly be planted thinly in rows 30 inches apart, and nineteen varieties of Peas, dwarf and medium height, have been sown. These include the very best varieties of wrinkled Marrows, generally of about 3 feet in height, that could be obtained. There will also be sown the best varieties of Dwarf Kidney Beans, including two not yet in commerce; also Scarlet Runners and Longpod Beans. Most of the varieties are little known to the allotment holders, and their development will be closely watched. After all the various crops are well through a dressing of sulphate of ammonia will be given over one half of each row and an equal dressing of nitrate of soda over the other half. It is in this way hoped to ascertain to some extent which of these two famous nitrogenous manures seem to be the more fertilising.

The trial plot at Richmond is situated in a prominent position in the centre of the fine group of Corporation allotments, a group that is second to none in the county. The soil is light and porous. Having been dressed with animal manure and deeply dug, one half has been sown with numerous good varieties of Peas, several rows to lie on the ground, and others of the same varieties, with various others, to be staked. It is hoped that the value of staking Peas, where stakes are dear, will be fully evidenced by the greater produce found on the latter rows. The other half will later be sown with several fine varieties of Onions, Beets, and Carrots, all the best strains being secured for this purpose. The relative values of nitrate of soda and sulphate of ammonia as dressings will also be tested.

The ground at Bookham, some 24 rods in area, kindly presented by Mrs. Chrystie, will be utilised for growing Peas and Potatoes for continuation school gardens. This ground being rather poor has lately been dressed with animal manure. One half has been sown with some half dozen useful Peas, such as The Daisy, Senator, Prince of Wales, Dr. Maclean, Magnum Bonum, and one or two others; the other half will be planted entirely with Potatoes. Later on half, longitudinally, of each side will be dressed with sulphate of ammonia. The lesser area of ground at Egham, which is very sandy, will be used for a trial of Dwarf French Beans and some Potatoes.—A. D.



CATTLEYA MIRANDA.

PROMINENT among the many beautiful Orchids that were staged at the Drill Hall on March 8th was *Cattleya Miranda*, which was shown by Messrs. J. Veitch & Sons, Ltd. It is a hybrid resulting from a cross between *C. guttata* Prinzi and *C. Trianae*. The flower is very handsome in both form and shape, and was much admired. The prevailing colour of the sepals and petals is soft rose, but the broad petals are splashed with crimson. The fimbriated lip is deep velvety crimson with a peculiar suffusion of violet. The woodcut (fig. 54), depicts this beautiful hybrid, which received an award of merit from the Orchid Committee of the Royal Horticultural Society.

CYCNOCHES.

THE Swan-neck Orchids, as they are generally called, are not very popular; indeed, if we except one species, *C. chlorochilon*, it is unusual to see any of them in collections. This is a great pity, for few Orchids are more interesting, and they possess a good deal of beauty. The genus takes its popular name from the gracefully curved column, which is more marked in some kinds than others, but peculiar to them all. Although of very rare occurrence, under cultivation most of the *Cycnoches* have the habit of producing two kinds of flowers upon a plant, the male and female.

So different in appearance are these, that at one time they were thought to belong to separate species, but when a plant flowered under cultivation bearing the different flowers it was evident that they belonged to one and the same kind. The culture of *Cycnoches* does not present any great difficulty, and success or failure depends more upon careful attention to details than to any peculiarity of the plant. When these are newly imported they have the appearance of a thick mass of half-dry sticks, no green foliage being apparent, and the colour of the bulbs being almost hidden by the whitish scaly remains of the old foliage. To look at these one would say that they possessed little value, but a short time in a warm moist atmosphere soon plumps them up, and apparently brings them back to life.

When all traces of shrivelling are gone, and young shoots begin to appear at the base, the bulbs may be potted or basketed principally in clean crocks; but established specimens like a fairly substantial compost, a little loam fibre mixed with the peat and moss being useful for the stronger plants. Good drainage is essential in all cases, and this must be protected by placing thereon a little of the rougher part of the sphagnum or peat fibre. Let the leading pseudo-bulbs just rest on the top of the compost, but avoid burying them. Then when the large, fleshy roots appear they enter the new material at once, to the advantage of the forming flowers and pseudo-bulbs.

The safest time to repot is when the young growths are starting, but none of the species likes disturbance, and should be returned to their growing quarters without delay. This should be a well-heated, moist, and light house, where the plants can be exposed to the full sun in winter, but sufficiently shaded in summer to prevent injury to the somewhat tender foliage. But for this being so easily scorched, the plants would do far better in baskets suspended from the roof than in pots a yard or more away on the stage.

Water sparingly at first, but when the new roots are running freely in the compost a full supply is required. The foliage would be all the better for frequent light dews from the syringe, but the water is apt to collect in the centre of the growth and cause this to decay. In summer, when moisture is freely used about the house, it is a good plan to turn each plant upside down for a few seconds in the morning, this allowing any water that has collected to escape. Towards the end of the summer the new pseudo-bulbs will be fully made up, and soon after this the root moisture may be somewhat lessened.

The foliage soon after begins to lose its colour preparatory to the plants going to rest, and they may then be hung up or placed on a

light stage where the sun reaches every part of them. The most frequent mistake made with this deciduous class of Orchids is allowing the roots to get dry too quickly, thereby starving the bulbs just as they need the most support. Ripen them thoroughly first, then rest them by withholding both heat and moisture to a certain extent. The pseudo-bulbs will then keep plump all through the winter and early spring, though they get scarcely a drop of water, and the young growths resulting will be all the stronger and more vigorous for the long rest.

C. aureum is one of Mr. G. Ure Skinner's introductions from Central America, and bears pendulous racemes of pale yellow flowers. It is not so well known as *C. chlorochilon*, which is without a doubt one of the finest in the genus. The pseudo-bulbs are about a foot high, and bear many-flowered racemes, the blossoms varying considerably in size. The largest are more than 6 inches across, but the smaller the individual flowers the more of them are produced on the racemes. The ground colour of the flower is a pale yellow



FIG. 54.—CATTLEYA MIRANDA.

with just a suspicion of green, and there is a large dark blotch under the column. It was introduced to this country by Messrs. Loddiges of Hackney, who imported it from Demerara in 1836.

C. maculatum is a rare but distinct species, a native of Mexico, and sent by its discoverer, Mr. Ross, to Mr. Barker of Birmingham. A fine plant I noted recently had a flower spike about 15 inches in length, closely covered with the yellowish flowers, spotted with crimson and purple. It first flowered in this country in 1839. *C. pentadactylon* is a fine species introduced by Messrs. Veitch when at Exeter, in 1841. It comes from Rio de Janeiro, and was discovered by their collector, Mr. W. Lobb. The blossoms are produced on many-flowered racemes, and are prettily spotted with reddish brown on a yellow ground. It is one of the brightest of all the known kinds. —H. R. R.

THE CROCUS SEASON.—The displays of Crocuses this season appear to have been good, lasting over a longer period than usual. The mild weather in early February brought the bulbs into bloom, after which cooler weather and the absence of strong sunshine prevented them expanding fully, causing the flowers to be preserved in excellent condition up to the present time. Unfortunately, birds attack the yellow flowers often strewing the ground with detached petals.—E.

AMONG THE HARDY FLOWERS.

ONE of the drawbacks to spring gardening is the occurrence of late frosts. This year such was the mildness of winter that we were in hope that these would be spared us, though past experience made us mingle the hopes with doubts. These fears have been justified, and, as this is written, night frosts are not only frequent but of great severity. They are trying to the young growth of many plants, and, with the brilliant sunshine which follows, shorten and deface the beauty of numerous flowers. On a recent morning everything was powdered over with rime, and as one went round the garden it was easily seen how keen the frost had been. Many of the Daffodils and Snowdrops were almost prone; the Water Lily pools were sheeted with ice, and the gold fish within were seen as through a window; Scillas, Chionodoxas, and other flowers were frosted, and looked beautiful with their silvering. Especially pretty was Chionodoxa Alleni, which seemed as if it had been carved out of some coloured substance, and then silvered over, but not so deeply as to hide the colouring below. As the sun gathered power these things changed, and the flowers resumed their wonted appearance. Yet the inclemency of the nights leaves its mark upon the blossoms. Colours are dimmed, and their brilliancy greatly reduced, so that it has become profitable to cover many of the plants in flower in some temporary way at night. Extemporised coverings do much, but the possession of a few hand-lights and glass shelters is found a great advantage in such a season. Put on at nightfall, and removed when the sun shines through the frosty air, these shelters will soon repay themselves by the longer and brighter display they give, although they cannot so well be employed for large masses of flowers.

As usual it is to what are broadly known as bulbous plants that we are principally indebted for flowers in March. There is no lack of these, and those who embark upon the cultivation of the less common genera, or species and varieties, will find much true pleasure in its pursuit. Daffodils are, however, widely grown, though one can hardly call them "common" in the restricted sense of the word. Despite the prominence given to them by the gardening press and the efforts of specialists, it is surprising to find how limited a number grow any considerable variety; how few are acquainted with some of the more modern introductions, even those procurable almost as cheaply as the older standard varieties. One is led to this remark by finding how much the pale early Daffodil—*Narcissus pallidus præcox*—is noticed and admired when seen in gardens. It is cheap enough, and in light soil and in a sunny place has been quite a success for many years. Seedlings raised from it are now coming into bloom, and are showing evidence of the work of the bees in carrying pollen from some other Daffodils. One of these appears to be the little *N. minor*, one seedling showing the size and perianth segments of *pallidus præcox* with the trumpet—but enlarged—of *minor* both in form and colouring. The majority of the Daffodils have yet to flower, but with the exception of the magnificent *N. telamonius plenus*, there is every prospect of a floriferous season, which will give delight to the lover of the Daffodil.

Ever admired also, and quickly growing in favour, is the Glory of the Snow. *Chionodoxa sardensis* was the first to flower, but though the greater number of plants of this species are in bloom, there are individual bulbs just pushing their points through the surface of the soil, so that the season of bloom will be a long one. One good form, received as "*C. grandiflora*" some years ago, when the latter was introduced, proved to be a fine variety of *sardensis*, and, as it has increased since it came, has been much admired in its place in the rock garden. *C. Alleni*, *C. grandiflora*, and *C. Lucilæ* are now represented among flowers in bloom, but the majority of these species are not in flower, though a few days will bring them to perfection. *C. Timolusi*, about which there has been some difference of opinion, is the latest to flower, and is not yet through the ground. None is more beautiful than the exquisite *C. Lucilæ alba*, though I expect it will be less regarded when *C. Alleni alba* comes into bloom, as it will do shortly. It may be of interest to remark that seedlings of the white variety of *C. Lucilæ* give a very small proportion of white flowers. There do not seem to be 1 per cent. among a considerable number coming into flower in my garden.

Scillas naturally claim some notice now, so pleasing are they with their bright flowers. Whether we look at the fine "bells" of *S. sibirica* or the smaller flowers of the varieties of *S. bifolia*, we cannot but recognise their beauty. In connection with the latter I have before mentioned Mr. Allen's seedling, named Pink Beauty, and I have now to mention another from the same source, named White Queen. This is of purer white than the ordinary white form of *S. bifolia*. It has also larger flowers, with broader segments. Although not at present procurable from trade sources, White Queen is mentioned with a view to interest others in the work of improving our early flowers.

Snowdrops are not yet over, and some may think they have been

long enough with us for the year. All are not of the same mind, and thus two or three of the later species or varieties may be named. Obtainable from some trade sources, and although not of the first rank in size, yet valuable for its time of blooming, is a variety of *Galanthus nivalis* named *æstivalis*, which I have not spoken of for a good while. It is small in size, and not so perfect in flower as many. Then we have *G. Gusmisi*, still in bud on 8th March. This is not plentiful, but I have seen it occasionally offered. It appears to be a variety of *G. caucasicus*. *G. Ikariæ* grown in shade is also lasting long in bloom, and is much finer in that position than in sun, its fine broad green leaves and pure bells being much more impressive. This year the varieties of *Iris reticulata* are flowering very badly; the only satisfactory one is *I. reticulata major*, a handsome flower with deep blue colouring, with a dash of white and gold in the centre. The failure of some of the others to flower makes one afraid that the disease to which these Irises are subject may have obtained entrance into the garden.

As usual, other flowers can only be incidentally mentioned now. The singular and beautiful *Narcissus cyclamineus major*, the rare *Crocus Sieberi versicolor*, *Hyacinthus ciliatus amphibolis*, all deserve a note to themselves. In the crowd of other things now coming on they may be overlooked. Grape Hyacinths show colour, *Arabis* grows daily whiter with bloom, *Aubrietias* begin to purple over, and the number of blossoms on the *Primulaceæ* increases rapidly. *Iberises*, too, show great progress, and despite the chill nights flowers hasten to fulfil their annual mission—a haste we who care for them think all too slow.—S. ARNOTT.

VEGETABLES FOR HOME AND EXHIBITION.

BRUSSELS SPROUTS.

ONE need not enlarge on the usefulness of Brussels Sprouts as a winter vegetable. No other member of the Cabbage family possesses the same flavour as the firm knobs which are the result of a good strain and good cultivation. From an exhibitor's point of view Brussels Sprouts come in only for the late autumn shows, and if shown on the stems it is not necessarily the largest that are the best, but those furnished thickly all the way up with sound firm knobs. For producing sprouts of this character varieties dwarfed in habit are preferable to those growing large, though if quantity is the object in view the latter are the better to grow.

From the end of October to April is the season during which we look to the Brussels Sprouts quarter to provide vegetables for the kitchen. Generally speaking the best results are obtained by giving the plants as long a season of growth as possible, in order that they may attain their full size and strength before the growing season is over and the winter sets in. Early sprouts being often in demand, the first sowing should be made under glass in February, followed by a second in a warm position outdoors in March. The first sowing may be made thinly in shallow boxes, or on a bed of light soil in a frame. A great deal depends on thin sowing, and it is easy to see the difference in result between plants that are weakly and drawn through having been huddled together in the seed bed, and dwarf sturdy specimens, full of health and vigour, that are obtained through thin sowing and early transplanting.

Though there are advantages in raising early, these are lost if there is any coddling or undue forcing. As the seedlings grow air must be admitted freely to harden them, and when large enough they should be transplanted either close to the glass in a cold frame, or in a bed of rich soil in a sheltered position outdoors, dispersing them at a distance of 6 inches apart. In order that they will lift with good balls for the final planting a little old Mushroom bed refuse may be incorporated. The second sowing should be made outdoors on the same lines as the first, the surface of the bed having been made fine, and the seeds covered thinly with old potting soil. Sprinkling the ground with fine wood-ashes often acts as a preventive against club-root trouble. Do not leave the seedlings to become crowded in the seed bed, but transplant as before, so that the vegetables from beginning to end may have a fair chance, and are subject to no check that can be avoided.

Attention must be paid to the preparation of the ground for the final transplanting, and though the advice to plant quarters as they become vacant with winter vegetables is good enough in the abstract, the soil and position for this important crop should have careful attention. Brussels Sprouts are gross feeders, and the soil must therefore be enriched with farmyard manure, more particularly so if it is of a light sandy nature, and not of the character to hold much moisture. Fairly strong soil of firm texture is the most suitable for the crop, and if it has not been in use for some time previous the top spit should be turned over and the next dug in the trench, incorporating with it some good manure. By this means the ground is worked and enriched to a depth of from 18 inches to 2 feet. Soil that has been subject to frequent manurings is improved by a dressing of lime.

The end of May and early in June are good times to make the final transplantings, this allowing for a long season of growth, and the distance apart must vary according to the variety. If due care has been taken with the plants in their seedling state they will be strong and sturdy, and lift with good balls of earth attached. If the weather be dry they should be well watered the day before transplanting. Brussels Sprouts may be removed in any weather if in good condition, and if the ground be dry a thorough watering will settle the soil round the roots, and there will be little or no flagging afterwards. The after cultivation consists in frequently moving the surface soil with the hoe, which conserves the moisture during dry hot weather, and when the plants are growing strongly applications of liquid manure from the farmyard may be given with advantage.

When the sprouts are formed and pulling commences all decayed leaves should be removed from time to time, but I fail to see the advantage of the wholesale cutting of the leaves which is often practised, as in the ordinary course of Nature this mutilation must have a detrimental effect on the plants. The terminal head is different in flavour from the sprouts, and should not be removed till the latter have been gathered, as in severe winters it forms a protection from frost. There are numerous varieties of Brussels Sprouts in cultivation, of which Northaw Prize, President Carnot, Matchless, Scrymger's Giant, and Sutton's Gem are amongst the best. — GROWER AND JUDGE.

TEN MINUTES' NOTES.

IN order to diversify these notes I contribute a trio on kitchen garden crops, as being seasonable, with a pendant on *Dendrobium* and *Centaurea*.

GREEN VEGETABLES *versus* THE MILD WINTER.

Many gardeners will be anxious in this advanced season to have all available ground cleared of winter crops, and dug preparatory for spring planting and sowing. A word of caution is called for to prevent any undue haste in making away with anything of the Brassica tribe that may yet prove useful. We are a long way off a good cutting of that delicious esculent Asparagus in quantity, or of Cauliflower, and spring Cabbage will most likely bolt in many instances. Spinach seems the only crop likely to be plentiful as a change vegetable. I would then urge on those who possess old Cabbage beds from last spring cuttings to let them remain for the present. Late planted Brussels Sprouts or Kales may yet be useful. The true Buda Kale, also Purple Sprouting Broccoli, raised in May or early June, are often highly serviceable. The early sowings of Cauliflower should be well on the way by this time. It is well to sow a few rows of Spinach now, to relieve and succeed the winter sown. No mistake will be made in forwarding spring-sown Lettuce, and having relays of French Beans and Peas in pots. Any little exertion that is needed to bring about choice early produce is more than counterbalanced by the ease of mind attained thereby.

SUCCESSION OF BROCCOLI.

How frequently do we see whole breadths of these coming in together, to be half wasted. This comes of the common habit of planting too many of the same variety at the same time. The safe plan for obtaining a steady successional supply all through the season is not to depend on two or three varieties, but to have at least six or eight of the most approved. Most seed catalogues class them into four divisions—namely, certain varieties that form heads in autumn, in early winter, early spring, and late spring. Select two for each division. For autumn, Sutton's and Veitch's Autumn Protecting are good, Snow's Winter White and Sutton's Winter Mammoth follow, and so on, until the seasons are provided for. We cannot always rely upon certain varieties coming to time, as in mild winters like the present they come in in advance of their proper season. By sowing the two first divisions in March, the next two in April, and others still later, a long supply is maintained by planting two or three rows, or more, as necessity demands, of each variety in turn on firm ground. Some of the best Broccoli I ever had were put in with a crow bar without the ground being dug. The plants should be 2 feet apart, well watered, blind or dead plants replaced, and a steady succession will be the outcome, instead of a glut at one time or a stint at another.

SEAKALE CULTURE.

The present time is suitable for forming new plantations. Formerly and in isolated instances at the present day the plants are allowed to do duty for years, being forced with fermenting material on the beds. This serves the purpose to a degree, where the plants do not canker. This they do with me after the first year, and therefore I have adopted the yearly planting of thongs, and shall not revert to the older system again. I always use the same ground; the soil is naturally of good depth, being annually trenched to secure the roots intact, as every little piece overlooked will grow. When a sufficient number of crowns have been dug for forcing, the roots are broken off from the main stem, and the strongest of these selected for sets. These are formed in 7-inch lengths, cutting the head square, and the opposite end slantwise, so that there will be no difficulty when planting in determining the right way uppermost. When the ground is cleared, holes are made 18 inches apart, and a set dropped into each, with the crowns an inch under the

surface. The holes are made with a Potato dibber. This leaves a good margin for some fine rich soil, such as potting bench refuse, with which each hole is filled. When growth commences we remove all shoots but one—the strongest. We keep the ground clean by the use of the hoe, and apply a dressing of nitrate of soda about three times during the growing season, and crowns are obtained of the highest merit.

DENDROBIUM SPECIOSUM HILLI.

The short note by "Herefordshire Incumbent" on this variety of *Dendrobium*, in a previous issue, with the attendant difficulty in coaxing, or shall we say starving it into flower, tallies exactly with the treatment meted out to a small specimen of Hill's variety at Lillesden some years ago. Amongst a collection this one absolutely refused to flower until Mr. Channing, the gardener, suggested what might be determined as "a shocking case of neglect." The plant was in a broken pot to commence with, and its destination a shelf in the sunny end of the greenhouse, with a final, "let it take its chance," which it did; once in a way, perhaps, it had a sprinkle from a passing watering-pot, and remained there for some months. I forget exactly how long, but one day towards the latter end of the summer, in glancing at it, I saw several small growths appearing. The plant was taken down, its dusty leaves sponged, the thirsty roots nourished with a dip in the tank, and in the end we were rewarded with five fine spikes of its cream-coloured flowers. I have a photo of it, but it is not suitable for reproduction, and I think it is a variety hardly worth the trouble to grow.

CENTAUREA CANDIDISSIMA.

On page 132, in a previous issue, I referred to these being used here in beds with Box edging a foot high. I am reminded by "H. H. R.," page 176, in his remarks anent the same, that plants grown in such a "shady depth," as my impression seems to suggest, would be unsuitable for cuttings. Undoubtedly, but I should have explained that the beds were raised 9 inches, and the Box edging so thick as to keep the soil in position, hence the plants inside had ample room to develop and grow sturdily. I agree with "H. H. R." that *Coleus Verschaffelti* and the *Centaurea* form a splendid contrast, not to be excelled by any other combination.—GEO. DYKE, *Stubton Hall Gardens*.

CARNATIONS IN THE MIDLANDS.

YOU have doubtless received ere now from your estimable Birmingham correspondent a report of the beautiful show of spring flowers held in the Botanic Gardens at Edgbaston recently. It was when down there for a day just to see and assist at this show I was favoured with a look over Mr. Robert Sydenham's collection of Carnations, which he grows so admirably in his garden at his Bristol Road residence. I found the entire collection of several thousands of plants just getting established in their flowering (10-inch) pots, and were all in light airy span frames or in cool houses. What must be seen in the matter of bloom and beauty in July it is not difficult to forecast; but finer evidence of the value of the Carnation as a town plant—and Birmingham is indeed a smoky city—could not very well have been furnished.

The Bristol Road garden is hardly a mile and a half from the centre of the great hardware borough, yet the Carnations seem to revel in the smoky atmosphere. Perhaps they rather like the sooty compound after all. The plants were all potted in fours, and all from the previous year's layers. There was not about them the least vestige of maggot or fungus. They were full of health and vigour without displaying any undue coarseness. The effort of the grower just now is to keep them as cool as possible by furnishing an abundance of air.

Mr. Sydenham, in a little treatise on "Carnation Culture," published in the Midland Carnation Society's schedule, mentions that he gets his chief factor (yellow turfy loam) from Kettering. I saw this, and noted that it was of a medium texture, full of fibre, and was undoubtedly good. This loam constitutes about one-half the final compost, as to it is added in limited quantities old leaf mould, burnt ash, and sea sand, he having a high opinion of the value of salt; good old well-decayed stable dung, or spent hotbed manure; and a little sifted old mortar refuse, an ingredient that is most useful for many plants that have alpine origin. This is a compound that anyone who can first obtain the turfy loam can mix for themselves. Then with respect to drainage, he mixes with the broken potsherds pieces of charcoal, crushed bones, and bits of mortar. The mortar, bones, and a little soot all have the credit of rendering the flowers brighter and the colours purer. The potting should always be done before the roots in the small pots become hard or bound.

The soil need not be too hard pressed, as it will settle down firmly through frequent watering, and a small top-dressing may be given later as desired. Of course very much more may be said, but I infer from what I know and have heard and read, that given good varieties, good compost, fair surroundings, and some material attention Carnation culture for exhibition is not at all difficult, or such as should deter anyone who loves the flower from embarking in it. With love of course must be some enthusiasm, and that feature is becoming very marked in the Midlands. Mr. Sydenham has no nursery, or one rod of ground anywhere, except what he has at Edgbaston, and this is a veritable amateur's garden, and no more. Without doubt men of his temperament, whether professional or amateur, can do great things in the interest of horticulture, and they do. It would be easy to enumerate scores of men of both descriptions who have accomplished much. All honour to them.—A. D.



WEATHER IN LONDON.—The days have been calm, dry, and cold of late, except during sunny intervals. Sharp frosts have occurred on several mornings, the thermometer on the grass registering 20°, or 12° of frost. Cold drizzling rain fell on Wednesday.

— WEATHER IN THE NORTH. — Following an extraordinary display of aurora borealis, on the evening of the 15th inst., three days were dull and drizzly, with a high westerly wind throughout the night of the 17th and the following day. The 19th was a fine bright day, with a coldish northerly wind. There were 5° frost on Sunday morning, and 2° on Monday, but both days were beautifully sunny and springlike, and, with a mere touch of frost, Tuesday also promised to be fine.—B. D., *S. Perthshire*.

— THE R.H.S. AND AFFILIATED SOCIETIES.—A wish having been expressed by some of the societies which are affiliated to the Royal Horticultural Society that they may be allowed to use the Society's badge, the Council desiring to meet this very legitimate wish for some outward symbol of affiliation, but considering it better that the badge should not be actually identical with that in ordinary use by the parent Society, have caused a new badge to be struck, which may be used by affiliated societies, on letter paper, schedules, &c., as they may think fit. A printing block of this badge will be presented to every affiliated society (now numbering over 100) on application to the Secretary, and on signing an undertaking to return the same if the affiliation should for any reason be ended.

— FORSYTHIA SUSPENS. — Few hardy shrubs make a finer display at any time than this plant, and flowering as it does in March makes it indispensable where a display of flowers is wanted at that time. It is one of the best natured shrubs we have, as it will grow and flower freely where many other plants would refuse to grow. Possibly it is seen to its best advantage when grown in close proximity to a group of evergreens, though it is difficult to imagine a place where it would be undesirable. When grown in a bed it is a good plan to prune rather hard after flowering, removing weak growth, and shortening strong to a few eyes. By this means shoots 6 to 8 feet in length are made during the summer, which produce flowers from every node the following spring. Plants which have assumed a semi-wild state are better left unpruned, or but slightly thinned.—W. D.

— SPRING GARDENING AT HAMPTON COURT.—Ample evidence is now to be seen of the way in which the new garden superintendent of these gardens is up to date in respect of making them attractive to the masses who visit them. In previous years a block of beds fronting the Palace chiefly have been filled with spring flowers, and these were almost exclusively Polyanthus of a not too varied nature, and Tulips not too robust. This year, for the first time, visitors see every bed in the long line, which borders the great gravel parade or terrace, filled with bulbs, including Hyacinths, now showing fine and promising spikes of bloom; and top or surfacing plants in good variety. There are the Polyanthus still, but not so monotonously planted; and some of them show rich colours and fine form. Another year it is hoped that the weak whites and yellows will be discarded, and only the best employed, and separately. The greater use of deep colours cannot be too highly commended. Then there are double red and white Daisies, Violas and Pansies in colours, Arabis, Wallflowers, *Myosotis sylvatica*, *Silene pendula*, Anemones, *Doronicums*, and similar plants. Some of these will probably bloom rather late, perhaps for a spring display too late, but they will at least furnish bright masses of colour, which will be far more pleasing than bare beds. All the old herbaceous beds have been thoroughly renovated and replanted, and so too has the long border that margins the Palace side of the terrace, and its planting in good clumps rather than in long formal lines should prove to be most attractive. This border sadly needs for its great length material widening. On these beds and borders labelling is not at all a picturesque feature, as an army of wood labels setting up 10 inches out of the ground makes each bed or border to resemble a miniature cemetery. Perhaps the Commissioner of Works may presently furnish something equally useful and less offensive. Many of the inner section of beds have been turfed over, a gratifying proceeding.—A. D.

— GARDENING APPOINTMENT.—Mr. T. Collings, for four years foreman at Swallowfield Park, has been appointed gardener to Fairfax Wade, Esq., Holme Park, Twyford, Berkshire.

— ALMOND BLOOM.—The Almond trees are just coming into blossom. I do not think they are any earlier than usual, though it has been asserted that in Battersea Park they are a month before their time. The retarding weather influences since March came in have served to prevent the blooms fully opening, but the first genial day of sunshine brings them out at once.—E. D. S., *Gravesend*.

— PRUNING FILBERTS AND COB NUTS.—A few days ago my employer remarked to me, "Is there any special way of pruning Nuts?" I detailed my mode of practice, which I have always carried out on similar lines to those advocated on page 226. I have usually had fair success by doing so, but judge of my surprise when my employer informed me of a well known firm in Devonshire sending all the way to the county of Kent for men expressly to prune their Nuts, as they found it rather difficult to obtain competent men in the former county to carry out the operation. If there is a better way than the one detailed on page 226, I, for one, and I have no doubt other readers of the Journal, would like to know. Perhaps some of our Kentish brethren would give us a few wrinkles on the subject.—G. HAGON, *Fowley*.

— CARNATION MARGUERITE.—From a single packet of seeds useful plants of these charming Carnations may be raised, and are very suitable when grown in pots for conservatory and other decoration. In order to insure their flowering the same season, February and March are the times to sow. Shallow pans are the best receptacles for the seeds, and a warm house is a suitable position. Remove the seedlings when large enough to small pots, and increase as required to 5 and 6-inch. A bed of cool ashes in a frame is a good place to stand the plants during the summer, and with due care in watering and attention no difficulty may be experienced in growing graceful specimens, either suitable for decoration or giving a supply of blooms for cutting. The colours vary considerably, and invariably some of the plants only produce small single flowers, which should be weeded out as soon as they appear. Late sown plants do not often attain sufficient size to bloom well the same season.—H.

— CAMELLIA RETICULATA.—Although not grown to anything like the extent that *C. japonica* and its varieties are, this species is held in high esteem in those establishments where large plants are to be found. In general appearance it differs from *C. japonica* by its looser habit, longer, more acuminate leaves, and larger flowers. The form usually met with has large, semi-double flowers, which are bright rose in colour. The petals are broad, about 2 inches long, fleshy, and undulated. The centre of the flower is made up of a mass of bright yellow stamens which are about 1 inch in length. When fully expanded the whole flower bears some resemblance to a semi-double form of the Tree Pæony. This form was known about twenty years before the single-flowered typical plant was discovered, the type being found by Capt. Champion in the woods in Hong Kong. See "Bot. Reg." t. 1078. The plant described above was figured in the "Bot. Mag.," t. 2784, as long ago as 1827, the figure being made from a plant imported by Captain Rawes, and flowered in the collection of Thos. Carey Palmer, Esq., at Bromley, Kent. At present a large bush may be seen in full flower in the winter garden at Kew.—D. K.

— SULPHUR AND RED SPIDER ON VINES.—In response to Mr. Craven's suggestion, I have to say that the sulphur I so invariably found effective in destroying red spider was invoiced to me by a drysalter, who supplied it to woollen manufacturers under the name of "sublimed sulphur." It looks quite different to any I ever got from nurserymen and grocers, being finer and less flakey looking; and its effects were more distinct even than its appearance. I believe it is obtained from iron pyrites, by a process described in "Miller's Inorganic Chemistry," second edition. I recommended this sulphur some years since to my old pupil and friend, Mr. Fisher of Stackpole Court Gardens, and his grocer sent direct, I think, to Huddersfield for it, and Mr. Fisher expressed himself quite satisfied with the result of its application. The pipes should be well loaded with it in a dry state. There need be no fear of applying a strong heat. It is quite safe up to 400°, a heat you can never get in hot-water pipes. The fear of any injury from a dry night air for ten days need not disconcert anyone. I never saw the least injury to berry or leaf from it, provided the Grapes were about the stoning point before applying it, and the sulphur was thoroughly cleaned off the pipes before firing began next season.—D. THOMSON.

— **DOUBLE PRIMROSES.**—Double Primroses are not readily propagated from seed, because the truest double flowers have attained to this condition owing to the essential organs of the flowers having lost their natural functions by becoming transformed to petals or floral leaves.—E.

— **NITROGENOUS MANURES.**—The chief use of nitrogenous manures is to promote growth, therefore all kitchen garden crops upon which we depend for a supply of luxuriant leaves, hearts, or stems are benefited by manuring reasonably with nitrogenous food, as, for instance, Asparagus, Celery, Cabbage, Cauliflowers, Brussels Sprouts, Rhubarb, Savoy, Spinach.—E. D. S.

— **WOLVERHAMPTON HORTICULTURAL CLUB.**—At the monthly meeting of the members of this Club, held on March 1st, Mr. Burrows, Berwick House Gardens, Shrewsbury, gave an excellent paper upon "The Cultivation of the Dendrobium." The subject was treated in a very able manner, and some photos of houses full of Orchids grown by the essayist showed clearly that he is a skilful cultivator of this beautiful and interesting class of plants. There was an excellent attendance of members, who showed their appreciation of the paper by the hearty discussion which followed.—J. F. SIMPSON, *Chairman*.

— **TRITOMA SAUNDERSI.**—This beautiful Torch Lily is not easily grown everywhere, and the treatment indicated by "N. N.," on page 242, may help some who have up till now failed with it. It may be well to point out that there is a possibility of erring on the side of keeping the plants too dry in summer. Even in wet districts some growers find it worth while to dig a trench round their plants, and to fill it nearly up with well-decayed manure. In summer several canfuls of water are frequently poured round the plants. This often vastly increases the beauty of the Kniphofias.—A. HARDIMAN.

— **RIBES SPECIOSUM.**—This Californian species is the most conspicuous of the spiny section when in flower. The flowers are pendulous, deep red, 1 to 1½ inch in length, with long protruding stamens, the whole bearing some resemblance to the smaller-flowered species of Fuchsia. When not in flower it can be readily distinguished from the other spiny species by its upright habit, bright brown bark, and by the wood (particularly when young) being densely clothed with stiff hairs and spines, which are the same colour as the bark. Although quite hardy, it flowers better if it can be accommodated with a position against a wall. When grown in such a position the flowers are produced during March; in the open ground flowering takes place several weeks later.—W. D.

— **ROYAL METEOROLOGICAL SOCIETY.**—At the meeting of this Society held on Wednesday evening, the 16th inst., at the Institution of Civil Engineers, Mr. F. C. Bayard, L.L.M., President, in the chair, a lecture on "Photographing Meteorological Phenomena" was delivered by Mr. A. W. Clayden, M.A., Principal of the New College at Exeter, who gave details of his experience as Secretary of a Committee of the British Association. After referring to the extreme value of photographic methods of recording the movements of instruments, the lecturer spoke of the real importance of preserving photographic records of all sorts of unusual meteorological phenomena, and emphasised the necessity of companion photographs showing the same scene under normal conditions. It was suggested that meteorologists throughout the country should co-operate with the Royal Meteorological Society in securing such records. The phenomena of the lightning discharge as distinguished from those of a single flash were next described and illustrated by a number of lantern slides. Some of the puzzles offered by lightning photographs were next alluded to, and the lecturer stated that he had repeatedly found that a single discharge lasted several seconds. Mr. Clayden then spoke of the "black" flashes shown in photographs, and described the steps by which some years ago he was led to the proof that they were merely a photographic phenomenon, but one which still remains unexplained. Passing on to a consideration of cloud photography, the various methods in use were explained, and a large number of lantern slides were exhibited, in some of which the clouds were shown on a background of blue sky in nearly their natural colours, a result obtained by the employment of suitable developers on a specially prepared plate. The method employed at Exeter by the lecturer for the measurement of cloud altitudes was fully described. This differs from all other methods in using the sun as a reference point. Mr. Clayden then spoke of the difficulty in getting good pictures of cirrus clouds, and described the methods dependant on the polarisation of the blue light of the sky, but expressed a conviction that polarisation had nothing to do with their efficiency, which was really due to a general lessening of brightness which enabled the exposure to be properly judged.

— **SOOT.**—Soot, as a rule, when employed as a fertiliser, is best used alone, but to destroy slugs lime may be mixed with it. The latter is rather the more wasteful plan as regards the fertilising qualities of the soot, lime quickly liberating the ammonia, which may be lost.—D.

— **VICTORIA NURSERIES, WEST HUMBERSTONE.**—Mr. H. Dunkin, for nearly seven years gardener to the Earl of Warwick, The Castle Gardens, Warwick, has taken the Victoria Nurseries, West Humberstone, Leicester, and enters into possession on the 25th of March.

— **THE HESSLE GARDENERS' SOCIETY.**—A meeting of the above Society was held in the Parish Hall on Tuesday, March 15th, Mr. Geo. Picker (Hesslewood) in the chair, when Mr. McIntosh, County Asylum Gardens, York, read a scientific and interesting paper entitled "The Laws of Nature Relating to Horticulture." The essayist described the different constituents necessary to plant life, and the manner in which they were taken up. He spoke of the influence frost and sunshine had upon vegetation, and also gave recipes for one or two excellent manures. Owing to the inclemency of the weather there was a poor attendance.—G. W. G.

— **AKEBIA QUINATA.**—In favoured localities this climber will stand uninjured through ordinary winters in the open air, but when it can be accommodated in a cool house with a pillar or similar support to ramble over, it is seen to much better advantage. When grown inside it flowers during March. The flowers are produced in short drooping racemes from almost every node of the previous year's growth. The flowers are purple in colour. It is a native of China and Japan. As it can be readily grown from cuttings, either of stem or root, grows very quickly, and flowers freely, it is worthy of note either for a cool house or sheltered place outside.—D.

— **FRUIT FROM THE CAPE.**—A second cargo of fruit has recently arrived from the Cape. The ss. "Norman" of the Union Line brought 242 boxes of Nectarines in first-class condition, which realised good prices; 62 boxes of freestone Peaches, also sold at good prices; 417 boxes of clingstone Peaches which, for the description of fruit, realised fair prices; these latter are not considered a good sale in this market. Some 30 boxes of black Grapes, which were very small and of poor quality, were sold at only nominal prices. Pears were sent to the amount of 40 boxes, which arrived in good condition, and fair prices were realised for this, the first consignment of the season.

— **SPRING TRENCHING AND RESULTS.**—I am sending you an Onion, as a sample, grown on the boys' gardens at Hawkhurst. It is Ailsa Craig, and the weight when lifted was just over a pound. There were (and are) many more like it. The important point in connection with the bulbs is that they are not the produce of box sowings, but resulted from seed sown out of doors early in April last year. The ground is stiff, wet clay. Up to the middle of March, 1897, it was under turf. I had the latter removed and the ground trenched in the wet spring of that year. We not only had some grand Onions, but a splendid lot of Peas and other vegetables. At the local shows the Onions were an easy first. Some people are asking what the boys will do when they get to be men if they go on like this. If you allude to this in the Journal do not forget to notice that the fine Onions and other vegetables were the result of spring work, not autumn or winter trenching, as the fact is suggestive, and should, I think, please Mr. David Thomson. He is a grand old man.—INSTRUCTOR. [The Onion is a model, finely shouldered and 14 inches in circumference. We have not seen a finer from autumn sowing in April.]

— **KERRIA JAPONICA.**—The double form of this Chinese shrub is frequently met with in gardens; the type, however, is not very often seen. Both are desirable garden plants, being easily grown, if given fairly good soil, in almost any position, and producing their deep yellow blossoms in great profusion every spring. The double form was in cultivation for a considerable period in this country before the typical plant was discovered. The single variety is not so vigorous as the double, but is more graceful in habit. The flowers are about 1 inch across, and produced on almost the whole of the previous year's growth. If left to itself it makes a dense bush 3 to 4 feet high. To be seen at its best a quantity of the old wood should be thinned out every year after flowering; by doing this long young shoots can be obtained, which produce abundance of blossoms. Plants lifted, put in pots in autumn and slightly forced, come in very handy for decorative work in spring. In addition to the double form there is a useful variety with silvery variegated foliage; this also flowers freely. Anyone who has a single plant of either can quickly raise a stock, as cuttings root readily in sandy soil in a cold frame during summer, and young plants grow quickly.—D.

— **MANURING MINT.**—In reply to "H. S.," page 239, I have not found Mint beds decline from a judicious top-dressing of decayed manure, but I have noticed the attack of fungus he speaks of in the old, impoverished portion of beds, also in plots where the Mint was planted in dry, poor situations. The reason of the fungus is not so much the manure, but the natural result of the decomposition of the old, exhausted underground rhizomes. The most luxurious and healthy Mint is found on the outside of old beds or newly formed breadths. The best treatment is to replant by inserting cuttings in the early part of May.—E. D. S.

— **TRANSACTIONS OF THE SCOTTISH HORTICULTURAL ASSOCIATION.**—The twenty-first annual report, embodied in the "Transactions" of the Society, is to hand, and is written throughout in a congratulatory tone. Everything is in a sound state, and the Society by its meetings must be doing good service to horticulture in Scotland. The papers that have been read during 1897 are given in abridged form, and contain much practical information on widely divergent gardening subjects. The arrangements for this year comprise many subjects of considerable interest to horticulturists. Mr. R. Laird, 17, South Frederick Street, Edinburgh, is the esteemed Secretary.

— **MAGNOLIAS IN POTS.**—These showy spring-flowering shrubs are admittedly beautiful objects for covering walls in sunny positions; but how often it happens that their beauty is destroyed in a single night by a sharp frost or heavy driving rain. Still I do not want to depreciate their great value on that account, being rather to plead for their extended culture in pots. At Barford Hill, near Warwick, I recently saw some very fine specimens in pots flowering grandly. Mr. R. Jones considers them to rank among the best of hardy shrubs for pot work, and in the future intends to grow them largely in that way, as they supply splendid objects for conservatory decoration, as well for handsome cut flowers. The varieties I noticed were *conspicua*, *purpurea*, and *purpurea Lenné*.—TRAVELLER.

— **HEBECLINIUM (EUPATORIUM) IANTHINUM.**—This fine member of a valuable winter-blooming family of plants was the other day carrying very fine panicles or trusses of lavender blue fluffy flowers at the Edgbaston Botanic Gardens. The numerous good strong plants carrying blooms made it a very striking feature. This strong-growing variety is much more effective than are the pale-hued, small-leaved varieties so commonly met with. It makes a capital companion plant to cut-back *Clerodendron fallax*. The variety named *H. ianthinum*, though classed as a stove plant, evidently likes a medium temperature best, as is evidenced at Birmingham. Those gardeners who may want something striking for conservatory decoration in the early spring should get a stock of this fine *Eupatorium*.—A. D.

NARCISSUS MINIMUS.

I AM obliged to Mr. Divers for his interesting note on page 167. I should be glad to see more of the same kind from him and other growers of hardy flowers. The first flower of *N. minimus* was on a clump on one of the lower terraces of a rockery, with an exposure almost due south, and "protected from the north by a greenhouse about 7 feet off, and from the east by the house, which is about 10 feet from it. It is fully exposed to other directions, and is in light dry soil. Our climate in the west of Scotland is, however, considerably milder than is imagined, and a Ross-shire correspondent told me a fortnight ago that he had *Gladioli* of the *Ramosus* section 2 feet above the surface of the soil. I have not kept my garden book of plants coming into flower very regularly for some time, but I see that in 1890 *N. minimus* flowered on 13th January; in 1891 on 28th February; in 1892 on 8th February. It was not in the same position then, but had more shelter, and a little less sun in winter. It may interest Mr. Divers to know that the first blooms of *N. pallidus præcox* and the *Saragossa* Daffodil opened on 10th February. The only other record I have of *N. pallidus præcox* is in 1892, when it opened the same day as *N. minor*—viz., 19th March. Much depends upon the situation, and unless the plants remain in the same situation for several years a record of dates is perhaps more interesting than valuable.

As a general rule, I find that bulbs lifted and dried come into flower earlier; but here again situation and also weather conditions come into play, which greatly modify the rate of progress. Times of lifting and planting are important factors, and it is quite possible that the unlifted *Narcissi* at Belvoir may have made some growth before the others were planted, and that the weather conditions were such as to prevent the latter from making growth for some days. My remark was founded upon a good deal of experience with bulbs of various kinds. Within certain limits I find that bulbs, especially those newly from the Continent and Asia Minor, which have been dried come earlier into growth and flower than those established for several years. This refers not only to *Narcissi* but to *Snowdrops*, *Muscari*, *Erythroniums*, and a number of others. These often come into growth too soon for their comfort, and to this I attribute many of the losses I have had.—S. ARNOTT, *Carsethorn, by Dumfries, N.B.*

EXHIBITING HARDY HERBACEOUS FLOWERS.

YOUR correspondent, "N. N." (page 243), has done good service in again ventilating this subject. It is to be hoped that the managers of flower shows may eventually see their way to adopt the regulations of the R.H.S. Judging Code referred to in your note, in which the maximum size of the tube is given.

The size of many of the bunches now exhibited is sufficient to defeat the object of the competitions, which is, one would suppose, the encouragement of the growth of flowers for which the prizes are offered. In many of these bunches there is no attempt to show either the habit of the plant or even what is usually required in what are known as florists' flowers, the points of merit of the individual blooms, spikes, or trusses. The great object in the eyes of some exhibitors appears to be to secure great masses of colour to attract the eye. Too often these tactics meet with the approbation of the judges, and stands more meritorious, because of more tasteful arrangement, better grown flowers, and greater rarity, are passed over. I believe that nurserymen who show the enormous bunches spoken of will in the end find it to their advantage to reduce their size and exhibit more of the little-known plants. As things are, frequenters of flower shows who have little opportunity of visiting other gardens than their own, can form no idea of the stateliness or grace, as it may be, of the flowers they see shown. A suggestion which has been thrown out of showing some herbaceous flowers in pots is worthy of commendation, but, I fear, involves an amount of work and expense which few would be disposed to undertake.

Those interested in the subject should send 1s. 1d. to the R.H.S. office, 117, Victoria Street, S.W., for a copy of the Judging Code, which is of the greatest value to schedule makers as well as judges and exhibitors.—S. ARNOTT.

NOTES ON ALPINE FLOWERS.

(Continued from page 192.)

ARENARIA BALEARICA.

THERE are some very pretty plants among the Sandworts, and although some have larger flowers, none give more pleasure to the grower of alpinists than the one under notice. It forms a mass of growth scarcely rising above the stones to which it loves to cling. It is almost moss-like in its appearance when out of flower, but when it begins to bloom the Balearic Sandwort is freely spangled over with tiny white flowers raised a little above the small green leaves. *Arenaria balearica* likes a rather moist place, and in such will soon creep over and cover a boulder of sandstone or other porous rock. It is quite hardy, but if not freely exposed to the light is liable to be lost.

The writer has never seen it grow so well as on the stones in front of a hardy fernery, which had a glass covering overhead, but was open in front. For the benefit of the Ferns the hose pipe was freely applied, and the Balearic Sandwort seemed to revel in the moisture and protection. It covered the stones and rambed in and out among them in the most pleasing way. On old walls where fairly moist it often looks very beautiful. The native habitat of *A. balearica* is correctly indicated by the specific name of the plant—which is not an invariable rule with plants bearing the names of places—as it is a native of the Balearic Isles. *A. balearica* is readily increased by division, but those who wish to secure its establishment in their rock gardens would do well to obtain their young plants in pots, as they would become established sooner than if sent without a ball of earth attached.

EPIMEDIUM MUSSCHIANUM.

While Mussehe's Barrenwort is not the best of a somewhat neglected genus, it is a pretty little plant which generally receives some praise from garden visitors if its somewhat small flowers are brought under their observation. It is of dwarf habit, and the flowers are not pure, but rather dull white in colour. Not many flowers are produced on the stalks, and the biternate leaves are composed of nine leaflets, of what are called cordate-ovate form. It is of dwarf habit, and grows only from 6 to 9 inches in height as a rule, although soil, moisture, and position modify its height to a considerable extent. Like others of the genus, *E. Musschianum* is propagated by division after flowering. This *Epimedium* likes a peaty soil, and thrives well in shade, although it grows very satisfactorily in the open. A native of Japan, it was introduced in 1836.

SAXIFRAGA BRYOIDES.

To plant authorities on the genus this Rockfoil is known as *Saxifraga aspera* var. *bryoides*, but for garden purposes the abbreviated name which appears above is amply sufficient. Although the growth is somewhat similar to what is known as the typical *S. aspera*, *S. bryoides* is distinct enough in general appearance to be readily recognised. *S. aspera* is much rougher and greyer-looking, and *S. bryoides* is much brighter green, and in certain stages of growth is extremely beautiful through the verdancy of its foliage and the peculiarly pretty way in which it grows, making its branches resemble green velvet cords, if such can be imagined. Like *S. aspera* it is, however, a very shy bloomer. It belongs to the mossy section, and is increased by division. *S. bryoides* is a native of Europe, and prefers a rather moist position.—ALPINUS.

(To be continued.)

THE SCIENCE AND PRACTICE OF FORMING FRUIT TREES.

RESULTS OF PRUNING.

ON page 207 (March 10th) was shown the method of pruning by which the long and strong shoots are shortened, the short and weak retained. The results of such practice I now endeavour to depict and describe.

The shortening was moderate. The topmost buds push the more strongly, as shown at J (fig. 55), and the others in degrees of vigour downwards to the base, most, if not all the buds starting. This is a matter of consequence, as the shoots (*u*) are required for forming permanent branches, and the side growths (*v*) for spurs to yield fruit. (See the figure first referred to, March 10th). The short shoots also produce some growths, but more particularly a number of leaves, which aid in the elaboration and storing of nutrient matter. The young extensions are not hampered by these growths, but receive a full measure of light and air, so that they become sturdy and well matured (*w*, in the present illustration), and even the shoots below them are in good trim (*x*),

The principles apply to the pyramid (*L*), this only requiring the shoots shortened in July, if growing too freely, and keeping the growths sufficiently far apart to permit the sun to shine in between the branches. The shoots can be shortened in the spring as may be desired for forming additional branches; or when ample and not unevenly balanced, leaving the extensions intact. Shortening, however, will mostly be required in the early years after planting, but too much shortening is a very common error, as resulting in useless annual wood growth instead of the production of natural spurs and fruit.

The result of hard pruning all the shoots (page 246, March 17th), is shown in the tree *M*. Each strong shoot cut hard back has started every bud, and a number of shoots (*N*) is the consequence, the longest at the top and shortest at the base. The extremity shoots (*b*) take and maintain the lead, whilst the others cut back to one bud have pushed relatively strong growths (*c*). Thus, in the autumn, there are a number of shoots (*d*) that are not required, and must be cut back to a couple of buds, unless this has been attended to in July by pinching them to the third leaf, and subsequently. If left, there is no reason why they

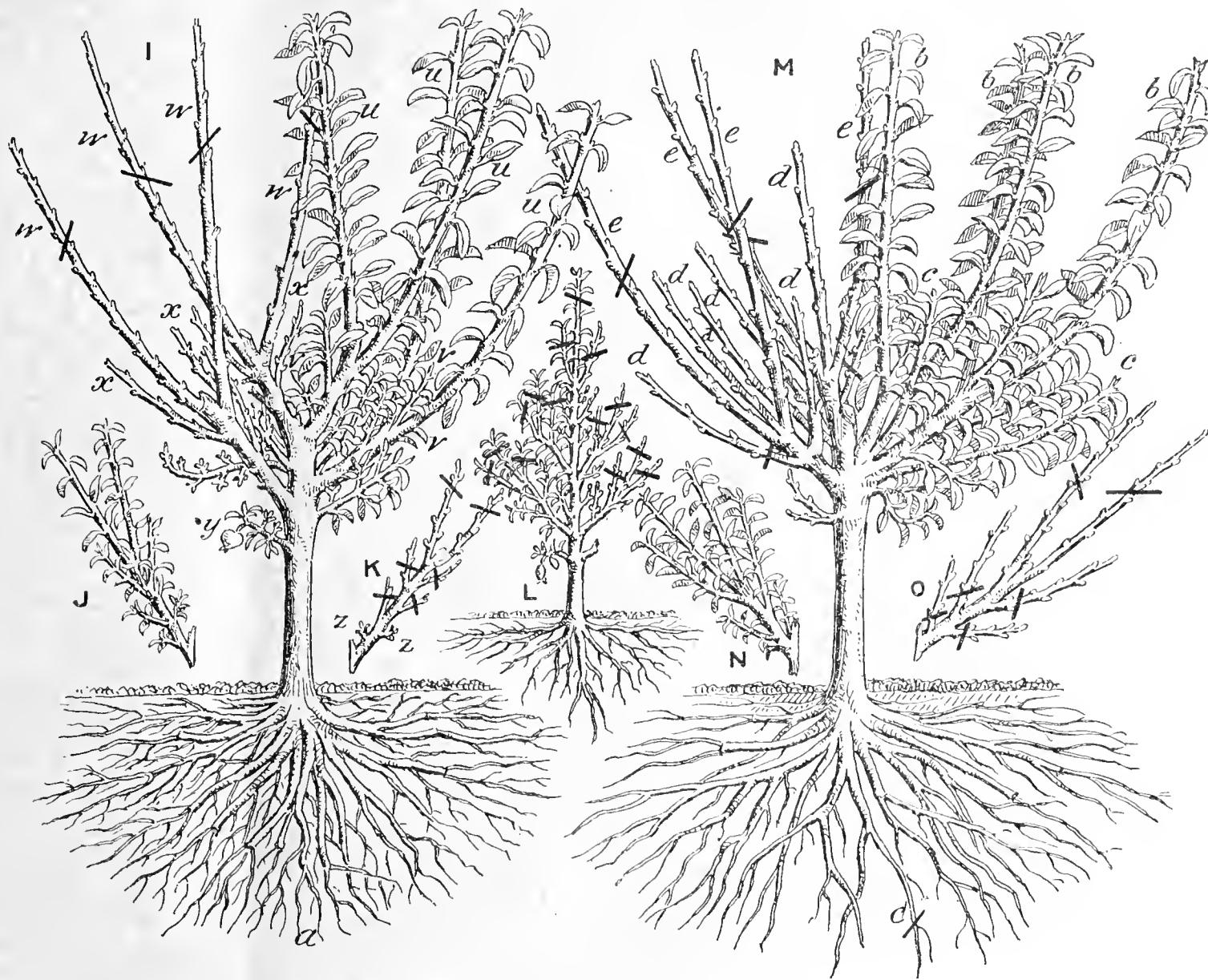


FIG. 55.—RESULTS OF PRUNING YOUNG TREES.

References.—Tree *I*—Strong shoots shortened and weak retained (page 207); results (above)—*w*, leafless strong shoots showing points of shortening; *x*, leafless short growths; *y*, spur in fruit. *J*, shortened shoot, showing rate of pushed growths. *K*, leafless shortened shoot with pruning marks; *z*, spurs; *a*, root formation. *L*, pyramid part in leaf and part leafless, indicating shortening. Tree *M*—the result of all shoots cut back; *b*, extension shoots in leaf; *c*, growths from cut back short shoots; *d*, the same, leafless, marked for pruning; *e*, leafless extensions marked for shortening. *N*, growths from cut hard-back shoot, showing starting of buds to the base. *O*, leafless shoots after cutting hard back with mark for pruning; *e1*, root formation.

so that they may, if considered advisable, be left as may be needed for furnishing the tree. They have, however, done what was mainly required of them—namely, the speedy re-establishment of the tree, and may therefore be partly or wholly cut away. This thinning and shortening is best done in the summer, say about the middle of July. It can, however, be left undone until the tree is leafless, then operating as shown in the leafless branch (*K*), always leaving the short stubby shoots or spurs (*z*) intact. The shortening of the extensions, as indicated by the bars in *K*, can be deferred until spring, so that we get more roots than top growth, and this of a very fibrous character (*a*).

In the way described the tree can be treated year after year until as many branches are had as desired, always keeping those of berry fruits at least 9 inches asunder, and those of Apple, Pear, and stone fruits between 1 and 2 feet. There must be no crossed branches to prevent the sun shining right into the centre, as we wish to secure a large fruit-bearing area, and to have the fruit even in size and colour. Nothing could possibly be simpler than the formation of the bush or standard tree on the lines suggested, which is that of the modern system of fruit growing, as distinguished from the cut-into-form method, regardless of the production of fruit.

should not be cut away in the early autumn, and then the movements of the juices will be free to act on the extensions. One result of the “cut-all-shoots-back” method is that a certain break is secured if there be sufficient vigour in the tree, every bud starting from the pruning bud of the shoot down to the base as shown at *O*. The tree thus made to produce wood has correspondingly fewer, but stronger roots, the generality being relatively long, and according with the character of the shoots.

The close pruning will not give strong and long shoots on a hard soil, for the roots will then be much branched or fibrous in proportion to the resistance encountered. Such trifles upset all the calculations of the physiologist, and the hard-pruned tree may produce short-jointed wood and plenty of fine fruit, whilst another tree in a looser and richer medium, pruned in exactly the same way, produces nothing but wood and leaves, the whole difference being in the soil staple. Still, soil conditions being the same, moderate shortening and some spurs mean a fair proportion of extension roots with an equally due measure of fibres, whilst close pruning implies a larger number of extension roots than the fibres, as indicated at *e1*.—G. ABBEY.

(To be continued.)



NATIONAL CHRYSANTHEMUM SOCIETY.

THERE was a good attendance at the adjourned annual meeting of the above Society, which, in compliance with a motion passed on February 28th, was held at Anderton's Hotel, Fleet Street, E.C., on Tuesday last, the 21st inst., at 6 P.M. Mr. T. W. Sanders presided. As was confidently expected on all hands, the meeting proved a most stormy one, and Mr. Sanders found his office of Chairman anything but a sinecure. The feeling of unrest first made itself felt when before the ordinary business commenced Mr. B. Wynne rose to make some remarks concerning the statement made by Mr. Geo. Gordon with reference to the medals voted by the Society to several of its officers. He (Mr. Wynne) had been a recipient of one of these medals. He had no idea that at the time it was granted that the Society was not perfectly solvent, but after what Mr. Gordon had said about the Society paying its way before it granted

medals to its officers, he felt that the only thing for him to do was to return the medal, for under the circumstances it had ceased to give him pleasure. In replying Mr. Gordon stated that he was sorry that his remarks had been taken thus. He wished to differentiate between the medals, of which Mr. Wynne's was one, which had been all paid for, and the gold medals and illuminated addresses, costing some £22, which had not at that time been paid for. This, he thought, to be reprehensible extravagance.

Mr. Wynne, amid very general applause, then withdrew his objection.

The minutes of the first annual meeting were next brought up. An alteration in the number of votes by which the report and balance-sheet were thrown out was found necessary, the exact figures being 82 votes for throwing out the amendment by 6 against. The minutes were then passed without further discussion.

Mr. R. Fife then proposed that the meeting be adjourned for twenty-four hours in order to relieve Mr. Sanders of a somewhat difficult office. Mr. Sanders was present in the dual capacity of Chairman of the meeting and Chairman of the Committee whose actions the meeting were assembled to criticise. In replying, Mr. Sanders hoped they had sufficient confidence in his impartiality, and trusted that he would be loyally backed up by the members present in his efforts to keep order. He elected to let matters proceed.

Some further alterations were made in the revised financial statement sent out to the members, and this finally stands as under:—

REVISED FINANCIAL STATEMENT, 1897.													
DR.		RECEIPTS.						EXPENDITURE.			CR.		
					£	s.	d.	£	s.	d.	£	s.	d.
Balance in hand	10	10	8				
Members' Annual Subscription—													
666 at 5s.		...			166	10	0						
7 at 10s.		...			3	10	0						
34 at 10s. 6d.		...			17	17	0						
93 at 21s.		...			97	13	0						
1 at 30s.		...			1	10	0						
4 at 42s.		...			8	8	0						
1 at 63s.		...			3	3	0						
								298	11	0			
Foreign Members' Subscriptions		...			...	...	6	2	0			
Donations and Special Prizes		...			...	...	73	7	6			
Royal Aquarium Company—													
October Show		...			75	0	0						
November Show		...			175	0	0						
December Show		...			50	0	0						
								300	0	0			
Bill Posting, as per contra		...			...	...	12	9	8			
Affiliated Societies' Fees		...			...	...	75	1	0			
Affiliated Societies' Medals and Certificates, &c.		...			...	...	121	4	6			
Entrance Fees and Rent of Space		...			...	...	115	14	0			
Sale of Catalogues		...			...	...	9	12	8			
Sale of Tickets		...			...	...	19	12	6			
Advertisements in Schedule		...			...	...	36	2	0			
Advertisements in Catalogue		...			...	...	45	0	0			
Reserve Fund, donations, &c.		...			...	...	0	12	4			
Balance transferred from reserve fund		...			...	...	47	15	4			
ASSETS—		£ s. d.											
174 Tickets at cost price		4 7 0											
8 Medals in hand, cost price		8 16 0											
1500 Jubilee Catalogues at		18 5 0											
30 Year Books		0 15 0											
Various Properties at Royal Aquarium		2 0 0											
Certificates, Cards, Envelopes, Stationery, Books, &c.		3 0 0											
Due on Catalogue Account		7 19 4											
Due for Space, November Show		1 10 0											
Arrears, Affiliated Societies		1 10 6											
Arrears, Members' Subscriptions		20 18 6											
		£69 1 4											
Reserve Fund, on deposit		50 0 0											
Reserve Fund, current account		8 17 8											
		£58 17 8											

The Chairman formally proposed, and Mr. B. Beckett seconded, that the financial statement be adopted, and a lively discussion then ensued in which the various items came in for a good deal of scrutiny and criticism.

Mr. Cholmeley asked why the auditors' signature was not appended, also if it was not a fact that the year's expenditure had exceeded the receipts by £58 6s., and he likewise questioned the disposition of the reserve fund, which, however, the alterations fully made plain. Mr. Cholmeley concluded by observing that if it were true that the Treasurer had never received or disbursed a shilling of the Society's money it was useless to elect a Treasurer.

In reply to a question respecting the auditors, the Chairman said that the auditors had been asked to examine the revised financial statement, but had refused. They said they were not asked to value the Society's liabilities and assets, and if it had been wished that they should do so the request should have been made on or prior to February 24th. They refused, therefore, to recognise the alterations.

Mr. H. J. Cutbush and Mr. A. E. Stubbs made *viva voce* statements confirming their decision, the latter gentleman saying that the first financial statement was both intelligible and accurate, and that they could not go beyond it.

Mr. R. Dean gave a detailed explanation of the reason why the show expenses (£32 7s. 5d.) for 1897 seemed so high. Prior to 1889, he said, the sums were split up under various heads, such as cartage, labour, and hire of plants, and thus while the sum under the head of "show expenses" seemed small in comparison with late years, the expenditure was in reality greater. Thus in 1891 the total expenses for only three shows were £42 12s. 6d., and in 1889 £53 1s. 10d., also for three shows; whilst the centenary shows in 1890 cost only £69 15s., and the Jubilee show in 1897, five exhibitions in all, £59 15s. These figures were, he averred, eloquent of the improvement made.

Mr. Moorman was very severe upon several items appearing in the financial statement. Granted that things were bad in 1889, there had

surely been time enough to reform since then. The printing and medal accounts were, he thought, much too extravagant, and he would like to see tenders invited for both printing and the making and engraving of the medals. He made out the show expenses to be over £102, for he included the £50 for stamps, telegrams, &c. They had gone to the world, as if they had been a flourishing society, which events had proved they were not. Speaking of the Aquarium, he said that it might suit some, but by no means all, whilst he strongly deprecated the practice of selling the best parts of the floor space to sticks, manures, and other trade articles, and driving the grand blooms of Chrysanthemums into dark corners and galleries. With regard to the £18 odd for the annual dinner expenses, he was sure they ought to invite the members of the horticultural press, but they did not want anybody else there just for the glorification of the Aquarium.

Mr. Dean thought that Mr. Moorman's assertion that the £50 for stamps and telegrams was part of the show expenses a reckless one. The schedule cost 1½d. postage per copy, and 2000 copies were sent out. The postage of medals, per registered post, was a heavy item, whilst they had to pay heavily for certificates and medals sent abroad; none of the latter would go under 1s., and some cost as much as 1s. 6d., 1s. 8d., and 1s. 10d. Then there were the expenses consequent on issuing notices and passes, and of the annual outing. All cut blooms for exhibition were acknowledged on receipt, and cards for naming were also sent if desired. All this cost money, and made a heavy aggregate.

Mr. Cholmeley asked what they proposed to do now that the auditors had refused to append their signature to the financial statement. To this the Chairman replied that that was for the meeting to decide.

Mr. Spicer said that they wanted a balance sheet, but that they had only got a financial statement, and asked if the one they were now discussing had been sent out with the Treasurer's sanction.

Mr. Starling replied that it had. On retiring he asked, after looking at several accounts, if that was all the Society owed. He was told no! Up to that time he did not know of Pollett's and Restall's account. Mr. Starling again asserted that last year their ostensible balance of £10 10s. 8d. was not a balance at all, for they owed other monies. They ought to have a balance in hand of at least £300 or £400, and they had nothing but a paltry £50. Speaking of the reason why the reserve fund had been reduced by £50, he said that the bank would not allow them to draw less than £50 from deposit. This had accordingly been done. £14 15s. 4d. had gone to make up the deficit, and the remaining £2 4s. 8d. had been transferred to the current account of the reserve fund.

In reply to a question by Mr. P. Waterer, as to whether there was any cash in hand wherewith to work, Mr. Dean said that he closed his petty cash account on January 31st. Since then there had been two annual meetings, at a cost of £1 13s. 6d. each, for which he had to pay out of his own pocket. He had received, however, on behalf of the Society £11 1s. 3d. during the present year.

The liabilities which were added to the revised balance sheet came in for merciless handling.

Mr. Willis said it had been stated that the auditors knew not of these, but surely they must have found out about them if they had looked at the bills which bore receipts for money paid on account. Mr. Starling corroborated this very emphatically.

Mr. McKerchar asked the Treasurer why, if he had his doubts as to the accounts, he had not laid his doubts before the auditors or the Committee. If the Society contracted debts in 1897 it ought to pay them off in that year, or the members might expect to hear a good reason why.

Mr. Tagg, in a very amusing speech, said that nobody seemed to attach any importance to the financial statement, and nobody seemed to own it. He would like to know who was the father of it, and what it all meant. After further discussion, in which Messrs. G. Gordon, Mills, Rundle, and Bevan took part, the financial statement was finally carried.

It was elected that the report should be dealt with separately. A statement of estimated receipts and expenditure had been prepared by Mr. Dean. This showed that taking the minimum the Society might expect an income of £1066 11s., whilst the maximum of expenditure would be £1115 1s. 6d., or a balance on the wrong side of £48 10s. 6d. It had been decided, however, to still further reduce the expenses to £1044 3s., thus leaving a balance on the right side of £22 8s. Under this arrangement it is proposed not to hire any plants, and the prize money will be reduced. After an animated discussion, in which Messrs. H. Cannell, sen., Tagg, Weeks, and McKerchar joined, the meeting signified its approval of these estimates.

Passing to the consideration of the report, Mr. Cholmeley drew critical attention to its "high falutin" character. The Society's resources might be as great as ever, but that it was financially sound was largely a matter of opinion. Mr. Wilkins commented upon the incongruity of the report and the financial statement. Mr. Ballantine, on the other hand, expressed his belief that the Society's prestige was as great as ever. Mr. Moorman differed, and held up Birmingham and Edinburgh as being far ahead of them. There was, he said, too much of the one man element in the management of their Society. The only alteration made, however, was the deleting of the paragraph relating to the proposed special class for twelve vases of Chrysanthemums, which has been abandoned, and the belated report reached the harbour of safety at last, after a stormy experience, on the motion of the Chairman, seconded by Mr. B. Beckett.

The election of officers followed. The nomination of Sir Edwin Saunders as President, made by Mr. H. Cannell, sen., and seconded by Mr. Langdon, was carried, adopted *par acclamation*. The same might be said for the vote of thanks to Sir Edwin, moved by Mr. Ballantine and seconded by Mr. Langdon.

Mr. Moorman proposed, and Mr. Rundle seconded, that a paid

Secretary having no vote should be appointed, and the meeting agreed to this with but little demur.

There were two nominations for the General Secretaryship—viz., Mr. R. Dean, proposed by Mr. Cannell, and seconded by Mr. Simpson; and Mr. G. W. Cummins, proposed by Mr. Moorman, and seconded by Mr. Mold. The result was decided by ballot, and after the nominations for Committeemen had been received, these, together with the two candidates for the post of Treasurer—viz., Messrs. Ballantine and G. Gordon, were all submitted to the test.

The result was that Mr. Ballantine was chosen Treasurer, and Mr. R. Dean General Secretary by 63 votes to 43. Mr. Cummins had not canvassed for support, but it was known to some members that if a vacancy occurred he was prepared to fill it if desired. The following gentlemen were elected to serve on the Committee:—Messrs. T. Bevan, G. Langdon, A. Taylor, W. Howe, W. Wells, J. P. Kendall, F. Gilks, T. L. Turk, J. T. Simpson, R. Fife, W. Higgs, A. Outram, and W. Daniels.

Mr. T. W. Sanders was chosen as Chairman, and Mr. P. Waterer as Vice-Chairman for another season.

Mr. D. B. Crane's proposal that Mr. C. Harman Payne be asked to continue the office of Foreign Corresponding Secretary met with unanimous approval.

Mr. R. Dean read a communication from the Executive Committee which urged that Mr. J. R. Starling should (1) be elected an honorary Fellow of the Society; (2) be presented with a letter of thanks, signed by the President; and (3) with a small gold medal, with the length of his service in the Society engraved thereon. Mr. B. Beckett moved, and Mr. Ballantine seconded, that this recommendation should be carried into effect, Mr. Ballantine remarking that the letter ought to be engrossed on vellum. The meeting gave a very hearty assent to the proposal.

Mr. Cholmeley and Mr. Stubbs were appointed auditors.

The new rules which had been drawn up were then submitted for the approval of the members, and after several alterations, including the removal of the Secretary's name from the managing body, and as superintendent of exhibitions, were adopted.

Mr. Moorman proposed that "A sub-committee of five members (exclusive of ex-officio members) be appointed to inquire: (a) What places can be obtained for holding future exhibitions, either by a subsidy as now, or in reliance on the Society's own resources; (b) To closely examine the whole question of minor shows with the object of estimating their advantages and otherwise to the Society; (c) To fully consider the question of selling the floor space, to report the result of their investigations to the General Committee, who are now requested to formulate such recommendations to a general meeting of members to be held on the evening of the first day of the November show, and that no further fixtures be made before that date."

No objection was raised to this proposal. On the motion of Mr. C. H. Payne, seconded by Mr. D. B. Crane, Mr. J. R. Starling and Monsieur E. Calvat were elected honorary Fellows of the Society.

A vote of thanks to the Chairman brought the proceedings to a close as the hands of the clock were fast verging towards the witching midnight hour. The meeting lasted nearly five hours.

HIGHGATE AND DISTRICT CHRYSANTHEMUM SOCIETY.

A COMMITTEE meeting was held on Thursday evening last, when the dates of the Floral Committee meetings for this year was settled—viz., October 31st, November 8th and 14th. The Floral Committee was then elected—viz., Messrs. T. Bevan, J. Brooks, J. Brooks, jun., F. Burt, Mathews, and Turk, with the President, the Treasurer (Mr. J. McKerchar), and the Secretary (Mr. W. E. Boyce), as ex-officio members.

BATLEY CHRYSANTHEMUM AND PAXTON SOCIETY.

ON Tuesday, the 15th inst., the annual dinner of the above Society was held. It was presided over by G. Hollis, Esq., who was supported by Mr. J. Farrar, a former President of the Society, J. Bentley, Esq., President of the Morley Paxton Society, Mr. W. Boston, Mr. Western, Mr. Thos. Garnett, Wakefield, and upwards of fifty members of the Society. Delegates were also present from the Bradford, Bristol, Morley, and Wakefield Paxton Societies.

The President, in responding to the toast of "The Batley Chrysanthemum and Paxton Society," proposed by the President of the Morley Society, said that, owing to another important meeting, many influential and warm supporters of the Society were unavoidably absent. He was glad, however, to see present almost every member of the Committee, to whom the public of Batley and district were more indebted than they probably knew for the grand Chrysanthemum show which had been held in the large Drill Hall every November for so many years. Of course he knew and took into account the subscription list, which enabled them to offer so many liberal prizes in addition to the seven valuable challenge cups, which had done so much in stimulating the local growers to a high degree of excellence in their exhibits. In addition to that, their 25-guinea challenge cup, open to all England, had brought to Batley exhibitors of the first rank from far and near, thus lifting their show to a very high level. Owing to bad weather on the show day their balance had fallen a few pounds on the wrong side, but the enthusiasm of the Committee in subscribing the money out of their own pockets—working men as most of them were—had put matters right. They had no reasons for despondency, and he had confidence in a bright future for the Chrysanthemum show, and in other work in which they were engaged.

The other toasts on the list brought out some capital speeches of a business-like and encouraging character, and the enjoyment of the evening was greatly enhanced by a musical programme of patriotic and humorous songs.—T. G. W.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—MARCH 22ND.

THOUGH the day was murky without, and some of the fog penetrated the Hall, yet the brightness of the long tables of flowers predominated. Very brilliant indeed was an imposing display of Hippeastrums, raised and exhibited by Captain Holford, Westonbirt (Mr. A. Chapman, gardener)—an extensive and fine assortment, in greatly varied colours.

Messrs. James Veitch & Sons arranged one of the finest groups of Clivias yet seen—massive trusses of brilliant flowers, being effectively set off by rich green leaves.

Messrs. Hill & Son, Edmonton, exhibited a great and varied collection of Ferns, and Messrs. J. Laing & Sons arranged a diversified assortment of stove and greenhouse plants, also a pleasing assortment of floral decorations.

A fine mass of Narcissi in pots and many cut bunches, also various other hardy spring flowers, were exhibited by Mr. T. S. Ware, and Mr. R. G. Cuthbert, Highgate, arranged a very fine collection of Tulips in pots, Ophir d'Or, a beautiful yellow, showing conspicuously. The St. George's Nursery Company, Hanwell, exhibited a large assortment of admirably grown Cyclamens. Messrs. Cutbush & Sons arranged a bold miscellaneous group, in which the yellow Calla Elliotiana contrasted effectively with the pendant scarlet racemes of Thysacanthus rutilans and other flowers.

Messrs. Wm. Paul & Son had three considerable sized groups of Roses in pots, two of them composed of the beautiful and floriferous Enchantress, and the other of about a dozen of their new varieties, including Souvenir d'Eugène Verdier, Sylph, Madame Julius Grolez, President Carnot, Antoine Riviere, and others that will be seen again. The Waltham Cross firm also arranged one of the largest and finest collections of Hyacinths that has been seen for many a day, all the best varieties in cultivation being apparently represented.

Splendid boxes of Roses were set up by Mr. W. Rumsey, yellows, whites, pinks, and crimsons, commanding the attention of visitors. Mr. Mount had also many beautiful blooms, some supported on long stems clothed with rich green leaves. Messrs. J. James & Son covered a great length of table with such grand Cinerarias as could scarcely have been dreamed of a few years ago. Mr. John R. Box, Croydon, had also an excellent display of these flowers, both plants and varieties being of high merit.

Messrs. B. S. Williams & Son exhibited Hippeastrums, Orchids, dense masses of Azalea mollis, Staphylcas, and various other plants. Messrs. Hugh Low & Co. had a compact group of Orchids in the best of condition and in choice variety.

Messrs. Paul & Son, Cheshunt, exhibited chaste and charming masses of various alpine plants that were much admired. Messrs. Barr & Son had a great and varied assortment of Daffodils of apparently all sizes and in all colours in which these popular flowers are represented. Mr. H. B. May arranged an attractive group of Clematises flowering freely in small pots.

FRUIT COMMITTEE.—Present: G. Bunyard, Esq. (in the chair); with Rev. W. Wilks, and Messrs. T. F. Rivers, H. W. Ward, J. Cheal, J. Willard, A. F. Barron, G. Reynolds, G. Norman, J. H. Veitch, W. Poupert, H. Balderson, G. Wythes, W. Bates, A. J. Laing, F. Q. Lane, W. Pope, C. Herrin, A. Dean, and J. Wright.

The duties of the Committee were extremely light on this occasion. Mr. J. Wythes sent from Syon six punnets of Royal Sovereign Strawberries, splendid fruits, firm and well coloured. A cultural commendation was unanimously awarded.

A new "cultivator," in the form of rotatory prongs, worked by hand, was introduced by Mr. Wythes. It is an implement of promise, and was unanimously referred to Chiswick for trial. It is the invention of Mr. G. W. Shailer, Brentford, and resembles a very miniature scarifier, such as is seen on some farms, but with the important difference that the curved prongs in the new "garden cultivator" revolve in either direction at will—that is, they can be drawn or pushed through the ground, and hoist the weeds, if any, on the surface.

VEITCHIAN PRIZES.—Apples.—First, Mr. J. C. Tallack, Livermere Gardens, Bury St. Edmunds, with Lamb Abbey Pearmain. Second, Mr. C. Herrin, Dropmore, with Sturmer Pippin. Pears.—First prize withheld. Second, Captain Carstairs (Mr. C. Ross gardener), Welford Park, with Nec Plus Meuris.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); and Messrs. C. L. Drewery, H. B. May, R. Dean, E. Molyneux, G. Stevens, J. F. McLeod, R. B. Lowe, J. Jennings, C. J. Salter, H. Selfe Leonard, J. Fraser, J. D. Pawle, C. E. Shea, C. E. Pearson, T. W. Sanders, E. T. Cook, E. Beckett, H. Cutbush, O. Thomas, E. Mawley, H. Turner, G. Paul, H. J. Jones, W. Howe, J. Hudson, D. B. Crane, G. Gordon, C. Jeffries, and James Walker.

CERTIFICATES AND AWARDS OF MERIT.

Amaryllis Ideala (Messrs. Jas. Veitch & Sons).—The flowers of this variety are large, heavily marked with crimson-red on a white ground (award of merit).

Amaryllis Clonia (Messrs. Jas. Veitch & Sons).—This is a charming variety with bold white flowers touched with pale green, streaked and margined with warm rose (award of merit).

Amaryllis Sacola (Messrs. Jas. Veitch & Sons).—Flowers large, brick

red, each segment having a broad white band down the centre (award of merit).

Amaryllis Beacon (Captain Holford).—The flowers of this variety are of medium size, and of a deep velvety crimson (award of merit).

Azalea japonica rubra (W. Nicholson, Esq., Basing Park, Alton; gardener, Mr. Smythe).—The small bright red flowers are borne with delightful freedom (award of merit).

Clivia Favourite (Messrs. J. Veitch & Sons).—Flowers produced in great trusses: colour pale salmon, with a soft yellow throat (award of merit).

Clivia Opitine (Messrs. Jas. Veitch & Sons).—A grand variety, with large well-formed trusses of terra-cotta (award of merit).

Dracaena Exquisite (Messrs. Jas. Veitch & Sons).—Plant of good habit, with broad bronze-green leaves, deeply margined with rosy pink (award of merit).

Hyacinth City of Haarlem (Messrs. W. Paul & Son).—The beautiful primrose yellow flowers are borne on long stout spikes.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien (Secretary), de Barri Crawshaw, Ballantine, Whittle, Gabriel, Chapman, Thorne, Young, Bond, Law-Schofield, Ashworth, Protheroe, Courtauld, Hill, Pollett, White, and N. C. Cookson.

CERTIFICATES AND AWARDS OF MERIT.

Odontoglossum Princess Christian (Baron Schröder).—A large flowered and beautiful variety with distinct blotches of chocolate brown (first-class certificate).

Dendrobium Ashworthianum (E. Ashworth, Esq., Harefield Hall, Wilmslow).—A pure white flowered variety with blooms in the form of *D. nobile* (first-class certificate).

Odontoglossum hybridum Ashworthianum (Ashworth).—Flowers with a pink lip and chocolate sepals, a curious and distinct variety (award of merit).

Odontoglossum Rochfordianum (Mr. T. Rochford, Turnford).—Flowers creamy, thickly blotched with brown, effective (award of merit).

Oncidium cuculatum (Frau Ida Brandt).—Plant had vanished when sought for purpose of description (award of merit).

MEDALS AWARDED.

Silver-gilt Flora medals were awarded to Messrs. William Paul and Son and Mr. G. Mount for Roses; to Captain Holford for Hippeastrums; to the St. George's Nursery Co. for Cyclamens, and to Messrs. J. James & Son for Cinerarias. Silver Flora Medals were granted to Mr. T. Rumsey for Roses, to Messrs. James Veitch & Sons for Clivias, and to Mr. H. B. May for Clematises. Silver Banksian Medals were adjudged to Messrs. Barr & Sons and Mr. T. S. Ware for Daffodils; to Messrs. J. Laing & Sons for wreaths and other ornaments; to Messrs. Hill & Son for Ferns, and to Messrs. Hugh Low & Co. for Orchids.

ARTIFICIAL MANURES.

WE daresay there are very few of the readers of the *Journal of Horticulture* who have not had a visit from some of the numerous artificial manure merchants. We have had a few, and if our experience is any criterion it is time more light is given to the subject, so as to enable those who have not had the facility for learning the "tricks of the trade," to understand something about what they are asked to buy. It is quite a common thing for some of these peripatetic manure vendors to promise to send the analysis of their fertiliser when they send you on the manure. We always consider that the man who cannot show us the analysis of the "stuff" we are asked to buy, so as to enable us to judge of its good, bad, or indifferent qualities, is not the one for us to deal with; and we think if the analysis is of any value, the owners will not mind showing it.

Last spring a traveller in the artificial manure trade called upon us with a Vine, Tomato, and a Chrysanthemum fertiliser. Of course there was nothing on this earth to equal his particular mixtures—indeed, the way he talked, one would have supposed he had a Klondike somewhere up in the north, and wanted us to share some of his gold; but although he stayed pestering us for nearly two hours, we could not be induced to take any. Some of our neighbours were less fortunate, and could not shake him off until they had promised to take a few cwt.

By an Act of Parliament passed in 1892 I believe every manure merchant is compelled to give an analysis to purchasers of more than 1 cwt. of manure. When the above merchant sent his mixtures he did not send an analysis, and of course this made the buyer suspicious. He wrote asking him to send one, but no notice was taken of his letter; another letter was sent, telling him that unless the analysis was sent by return of post the matter would be put in other hands. The analysis was sent, and on it was stated that the merchant guaranteed his mixtures to contain 1 per cent. of ammonia. Supposing his manure contained only the specified amount of plant food—viz., 1 per cent. of ammonia, its value to the purchaser would be 7d. per cwt., and yet the artificial manure vendor as good as told you he was giving you the stuff at 15s. per cwt. It should be added that the firm in question is not among those whose names are familiar to readers of the *Journal of Horticulture*.—W. DYKE.

[Our correspondent is quite right in his reference to the law on the subject, and we know of no respectable dealer who hesitates for a moment in sending an analysis of his product. We have ascertained this fact by a number of applications. From those peripatetic canvassers for orders who decline to furnish the information suggested, we should not be induced to "take any stuff."]

EASILY GROWN HALF-HARDY ANNUALS.

As the years roll on these popular flowers seem to be more largely employed for bedding purposes in both private and public gardens. It is well that this should be, for by turning half-hardy annuals to good account many a gardener who has a large flower garden to keep gay, and little glass accommodation, can achieve such satisfactory results as would be quite impossible under the older systems of bedding in which *Pelargoniums* and other tender plants played so important a part. A strong point in favour of many of these easily raised annuals is that they flower so profusely and continuously as to quite put to shame many recognised bedding plants which give ten times the amount of trouble. This satisfactory state of affairs has doubtless been brought about by the improved types which have recently been raised. Let us note a few of the more popular and easily raised.

AFRICAN AND FRENCH MARIGOLDS.—The older forms, though producing large and showy or prettily marked flowers, grew too tall for ordinary bedding arrangements; now, however, we have a race dwarf enough for any purpose. During the last two seasons I have thoroughly tested these miniature Marigolds, and have no hesitation in asserting that I know of no class of bedding plants which will give a more gorgeous and prolonged display of flowers from the time they begin to unfold their blossoms till sharp frosts spoil the whole beauty of the flower garden. Heavy rains, which ruin the beauty of many flowers, seem to have no detrimental effect upon Marigolds, as they look fresh and bright the following day, and present a marked contrast to many battered blooms around them.

For bedding purposes I strongly recommend the French miniature brown and orange. The plants seldom attain a height of more than 6 or 8 inches, and in each case the colours are those greatly in demand, because there are few bedding plants which supply them. The seed should be sown during the last week in March or early in April, in pans or boxes placed in a cold frame. When the plants are ready for pricking out, if the weather is rather cold, I sometimes dib them in boxes, but during favourable seasons I prick them out on a warm border, or in a rough frame formed with boards. A few stakes placed across the edges of the frame will then give the necessary support to mats placed on at night for protection.

An important point is to move the plants before they have become drawn, and afterwards insure sturdy growth by giving them plenty of room—6 inches apart I find a suitable distance. When the spring bedding has been removed I decide which beds are to be occupied by Marigolds; the surface of these is hoed and made level, but they are not dug. This practice prevents the plants becoming rampant, and induces them to flower early and continuously.

For large beds Webb's gold-striped French Marigold, of which I am able to give a typical illustration, is a very fine strain, the flowers being large, well built, and prettily marked. The plants grow to a height of about 18 inches.

African lemon and African orange are very showy for ribbon or mixed borders, or even for large beds where a broad edging can be given, but in order to obtain fine large flowers the soil should be dug and manured before planting. The plants naturally grow to a height of 2 feet, and cannot, therefore, by artificial means be kept dwarf without destroying their chief point of beauty—viz., the production of flowers of large size and brilliant colour.

ASTERS.—These ought to be grown by the thousand in gardens where various styles of bedding are carried out, as well as where cut flowers are in great demand. One set of plants will, of course, not give a long succession of flowers, and should not, therefore, be relied upon to produce a display throughout the summer; but for flowering during late summer and early autumn Asters are unrivalled, and it is just at those seasons that colour is often lacking in flower gardens. I have for some years made a practice of growing large numbers of Asters in boxes or pans placed in a cold frame, the first batch being sown during the first week in April and another a fortnight later. The seed is sown thinly, so that there is no need to prick the plants off until the weather is warm enough for them to be placed in the open ground. When this is done they are set about 6 inches apart, which induces them to maintain a sturdy growth. It is seldom that any of these Asters are used at the ordinary bedding-out time, but are kept in reserve for filling beds which become shabby, or to follow spring bedding plants which happen to flower later than the majority.

Let me give an example. At bedding-out time we may perhaps have beds of *Violas* in full beauty; these will go on flowering satisfactorily till July, when they often get shabby. Then is the time to clear them out and fill the bed with Asters, which will begin to flower in a few weeks, and fortunately they can be lifted with balls of earth and scarcely feel the check, even after the flower buds have formed. The dwarf bedding varieties sent out by firms of repute are excellent for the purpose. Large beds look very attractive when

planted with a broad band of the dwarf kinds and filled in with such fine taller types as *Victoria* and *Comet*. The white and pink forms of the latter I regard as the most beautiful of Asters, and each year they are more largely grown.

DIANTHUS HEDDEWIGI.—These beautiful flowers may be obtained in crimson, rose, salmon, and white shades of colour, and when in flower they are very rich in colour and showy in appearance. The seeds ought to be sown at once in order to get good plants by the end of May.

DWARF TROPEOLUMS.—Though these are commonly misnamed "Nasturtiums," they all the same make a good display in dry, hot seasons, but in wet ones they are not usually seen to advantage, hence many gardeners are cautious about planting them in a geometrical flower garden, still they are very desirable for planting in masses on borders or in dry positions. In poor hard soil they will often flower splendidly, while in rich garden soil they may be unattractive through producing too much foliage. The middle of April is quite early enough to sow the seed. I like to sow in boxes and transplant to their permanent positions early. *Aurora* (pale pink), *Scarlet*, *Cloth of Gold*, *Ruby King*, *King Theodore*, and *Empress of India* are some of the best dwarf varieties. Among tall growing ones the following make fine showy climbers—*Fairy Queen* (pale pink), *Lobbianum*, *Spitfire* (scarlet), *Golden Cloth*, and *Black Prince*.

PHLOX DRUMMONDI.—I find it necessary to make a distinction between the treatment given to the familiar type and the newer dwarf varieties. The latter do not grow very freely in the early stages unless sown in light rich soil, containing plenty of leaf mould and sharp sand. These should be sown at once in boxes, placed in cold frames, the seedlings pricked off at an early stage, and grown under glass till May. These compact varieties are extremely useful in the flower garden, as they only grow to a height of 6 inches, but require good culture to bring out their best qualities. They may be obtained in six distinct shades of colour. The taller growing varieties I sow thinly in boxes, and prick out on a warm border. They are charming flowers for cutting, and are abundantly produced till late in the season. It may not, perhaps, be generally known that the plants succeed well in town gardens when the soil is fertile.

STOCKS.—Old favourites are these, yet still much prized by many. The plants are gross feeders, and should be grown in good soil from start to finish. For this reason I like to sow in pans, and transplant on an old hotbed, protected by a frame, giving each plant plenty of room to develop without becoming drawn. The seed should be sown during March, and the plants fully exposed to air on all favourable occasions. *Perfection*, *Fire King*, *Snowball*, *Princess May*, *Improved Dwarf German*, and *Mont Blanc* are some of the best varieties among the Ten-weeked types.

ZINNIAS.—The end of March is early enough to sow these. I like to stand the pans in which the seed is sown in a frame where there is a little bottom heat, and when the seedlings are an inch in height place them singly in 60-sized pots. They then experience but little check when planted in their final positions—a matter of vital importance in *Zinnia* culture. *Sutton's Miniature Pompon*, which attains a height of about 9 inches, is a great acquisition for bedding purposes; and the large-flowered striped and tall double varieties supply quantities of beautiful flowers which are extremely useful in a cut state, as well as for border ornamentation.—H. D.

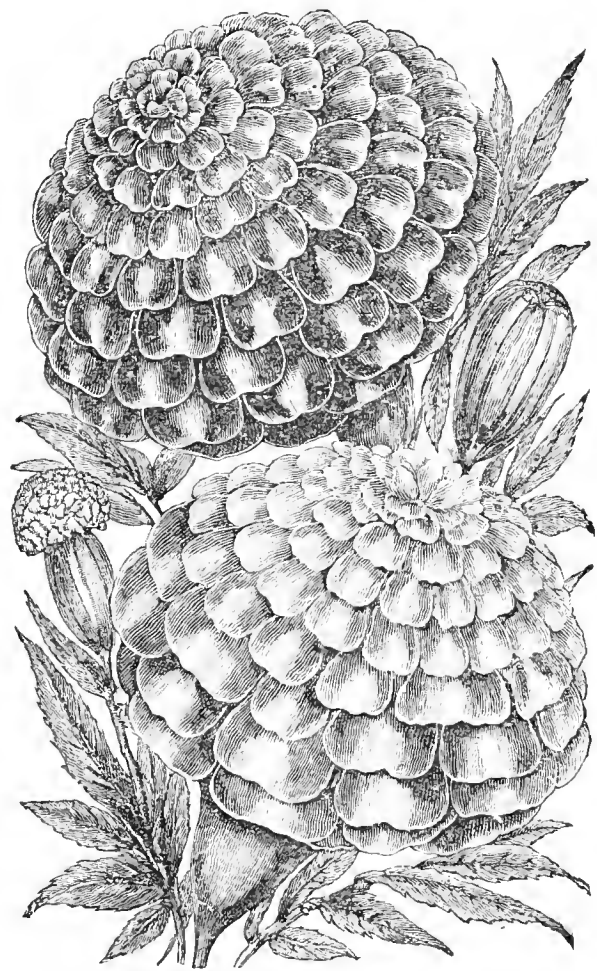


FIG. 56.—GOLD-STRIPED FRENCH MARIGOLD.

BIRMINGHAM SPRING SHOW.

MARCH 16TH AND 17TH.

THE second annual Bulb Show was held as usual at the Botanical Gardens, Edgbaston, on the 16th and 17th under most favourable conditions. The exhibits on the whole were an improvement on those of the previous occasion. A superb exhibit of Hyacinths, Tulips, and Narcissi in pots exhibited by Mr. R. Sydenham attracted much attention, as did an interesting collection of bulbs grown in ornamental glazed vases for table decoration in a mixture of cocoa-nut fibre, ground shells, and charcoal for drainage.

A most attractive and welcome feature was comprised of three collections of spring flowers in pots arranged for effect in a space not exceeding 30 square feet, both forced and naturally grown, the prizetakers in this class being Mr. A. Cryer, gardener to J. A. Kenrick, Esq., Berrow Court, Edgbaston, Mr. I. Priest, gardener to A. W. Hulse, Esq., Birmingham, and Isaac Cooke, Esq., Shrewsbury, in the order named. As may be readily conjectured, another highly attractive feature was the splendid display of non-competitive bouquets, wreaths, harps, and table decorations contributed by Messrs. Perkins & Son, Coventry. A collection of cut Narcissus and Daffodils, exhibited by Mr. R. Sydenham, added not a little to the general effect of the show.

For twelve single-flowered Hyacinths, distinct, Mr. W. A. Sarson, Moseley, secured the first prize for very good samples of La Grandesse, Princess May, Lord Macaulay, Vuurbaak, L'Innocence, King of the Blues, Grand Maître, Roi des Belges, Koh-i-Noor, and others. The second position was accorded to Mr. A. Ball, gardener to H. I. Horsfall, Edgbaston, the third being creditably taken by Sir John Jaffray, Edgbaston. For six pots of Hyacinths the first prize was won by Mr. S. Gibbs, gardener to J. B. Manly, Esq., Harborne, with fair examples of La Grandesse, King of the Blues, Fabiola, Queen of the Blues, L'Innocence, and Koh-i-Noor, the second going to R. Chatwin Cartwright, Esq., Selly Park, and the third to Mr. E. C. Fowke, Edgbaston.

For twelve pots of single Tulips the premier award was bestowed on Mr. A. Cryer, with very fine examples of Keyzers Kroon, Proserpine, Dusart, Joost Van Vondel, Cottage Maid, Ophir d'Or, Stanley, White Pottebakker, and Prince of Austria, whilst Messrs. I. Cooke and A. W. Hulse followed. For six pots Mr. E. Sharpe, Edgbaston, was placed first, Mr. E. C. Fowkes second, and Mr. Harvey Dubros third. The first prize collection consisted of excellent examples of Proserpine, Cottage Maid, Vermilion Brilliant, Keyzers Kroon, Joost Van Vondel, and Montresor.

For twelve pots of single Narcissi, not less than eight varieties, the first prize was awarded to Mr. A. Cryer with Golden Spur, Princeps, Mrs. Langtry, Figaro, Emperor, Barri Conspicuus, Sir Watkin, Henry Irving, Horsefieldi, and Grandee; whilst the second and third prizes fell to Sir John Jaffray and Mr. I. Cooke. For six pots the respective winners were Messrs. J. Sceany, E. M. Sharp, and R. Chatwin. For six pots of Polyanthus Narcissus Messrs. A. W. Hulse, R. C. Cartwright, and Isaac Cooke were the winners. In the class for collections of cut flowers of Narcissi Mr. Isaac Cooke worthily won the first position, the second being secured by the Rev. J. Jacob, Whitewell Rectory, Whitchurch, Salop; Mr. Chatwin Cartwright, the only other competitor, taking the third prize.

Pots of Lilies of the Valley were well shown, more especially the first prize six of Mr. A. Cryer, the second prize going to Sir John Jaffray, and the third to Mr. I. Cooke. Spiræas were fairly good, Messrs. A. Cryer, I. Priest, and I. Cooke taking the prizes. There were four collections of Cinerarias, the first prize being awarded to Mr. A. Cryer for well grown examples, the second and third prizes falling to Mr. G. S. Mathews, Edgbaston, and Mr. I. Cooke. In Mr. R. Sydenham's collection of Tulips the most notable were Unique, Proserpine, Stanley, Little Dorrit, Montresor, Golden Lion, Cerise, Gris de Lin, Duchesse de Parma, and Joost Van Vondel.

THE YOUNG GARDENERS' DOMAIN.

ON behalf of young gardeners permit me to render our hearty thanks to "An Old Boy" for his good, sound, practical advice to young men in the "Domain." I have had the pleasure of reading many previous articles which have appeared from time to time in the pages of the Journal, each of which was equally well filled with practical advice to young gardeners. I sincerely trust that his appeal will not be in vain, and I hope that ere many weeks have passed we shall see many new writers. I feel certain that nothing will be more gratifying for the "Old Boy" should this be the case, and let us hope that he will realise his expectations of us, and at some not far distant day take up his pen once more on our behalf.—J. F. D.

DAHLIAS.

THE Dahlia is a native of Mexico, and was discovered by Humboldt growing in sandy soils between 4000 and 5000 feet above the level of the sea. One variety flowered in 1789 under the care of that eminent botanist Cavanille, Professor and Director of the Botanic Gardens at Madrid, where he soon after flowered two others, and figured and described them in his "Scenes." From the Madrid gardens they were sent to the Jardin des Plantes at Paris in 1802, and in May, 1804, seeds arrived in England from Lady Holland, from which the first plants in this country originated.

The Dahlia may be propagated by seed, cuttings, division of roots, or grafting. The plants are very useful for adorning either the flower

garden or borders, to which they add a charming effect. They are of great value where cut flowers are in demand. In this case I think it advisable to plant in beds, the plants from 2 to 5 feet apart each way, according to the size of the varieties planted. They should be first started into growth in a temperature of 45°, gradually hardening the plants as the planting season approaches, and plant out as soon as the weather permits.

The soil most suitable for Dahlias is a good sandy loam not too rich, and which has been deeply dug and manured in the autumn. As soon as they are planted out each one should be neatly staked and kept well tied in during the growing season. When the flower buds appear an occasional watering of weak liquid manure and soot water will be very beneficial to the flowers. When growing for exhibition disbudding will have to be practised, and the flowers lightly shaded from the hot sun. They also require some protection from wet weather.—J. F. D., *Yorks.*

DWARF BEANS FOR EARLY WORK.

IN your valuable paper on April 8th, 1897, I wrote concerning the culture of this valuable vegetable, and was criticised by "Stone Warrillow" and "Single W." which I was glad to see. Now, "Stone Warrillow" and "Single W.," I am sending the Editor a sample of Beans, grown by the treatment I advised, and perhaps you would do likewise. What a fine chance we youngsters have to enlighten ourselves and to exchange our views in the "Young Gardeners' Domain." The Beans I send are Canadian Wonder sown in 60-pots. On January 4th, when about 5 inches high, they were potted into 16's and placed in the stove. I need not say more of the treatment, as it is recorded in the Journal for April 8th, 1897, page 301. I am sure the Editor will be judge for us.—W. W.

[The pods received were of first-class merit and a credit to the cultivator.]

BANANAS.

I HAVE been waiting several weeks for an answer to appear to your "Domain" correspondent's appeal for cultural notes on the above fruit. A few months ago I secured my present charge, and found myself similarly situated. I have two Musas growing in the stove in large tubs. In August last they showed fruit, which has been swelling slowly all the winter, but for the last two months appears to be at a standstill. The temperature of the house has been 65° by night, with a rise of 5° by day and 10° from sun heat. The plants have been copiously watered, and had liquid manure twice a week from the time the fruit started to swell up to the present. Is it usual for them to fruit at the time stated, or is it the result of bad management in the early stages of growth? If the fruit has now finished swelling, should they be cut, or allowed to ripen on the plant? Any information about them from a brother craftsman or an "Old Boy" will be gratefully accepted by—NIL DESPERANDUM.

ORCHIDS AT VINE HOUSE, HASLINGDEN.

A VISIT to this well-kept establishment, the residence of A. Warburton, Esq., is always full of interest to any lover of Orchids, and our visit recently was no exception. To enter into a full account of all the Orchids at Vine House would occupy far too much space, so it is intended only to give a short note of a few of the best in flower at the present time. We found Mr. Lofthouse and his assistants busily engaged arranging Cypripediums on a side stage in the Dendrobium house, which was until recently a Peach house, but the fruit has had to give way to Orchids. There was arranged a splendid collection of Dendrobiums, which was well worth a long journey to see. Very prominent were some grand specimens of the well-known and ever useful nobile nobilis and Wardianum. There were also two excellent specimens of D. n. Apollo—one a white, and the other a beautiful salmon colour, not yet named, but which will probably be heard of again. Several comparatively rare forms were observed in good condition, besides others which are often seen, but these need not be particularised.

Adjoining the Dendrobe house is one devoted to Cattleyas, in which there is not at present very much bloom. But there are some grand specimens from a cultural point of view. On entering one could not help being struck with a fine form of Cattleya Trianae alba. There were two fine spikes of Phaius Cooksoni, and a hybrid between C. Trianae and Mendeli, which is not yet named. From here we journeyed to the Odontoglossum house. Very showy on entering, suspended from the roof, were several pots of that little gem Sophronitis grandiflora, making a perfect blaze of colour. In a few weeks there will be a fine show in this house, there being hundreds of flower spikes showing. A fine specimen of O. Ruckerianum was very attractive, as was O. Andersonianum. There are many other Orchids grown well at Vine House which I might mention, but time and space forbid. Taken on the whole Mr. Warburton is to be congratulated on the excellence of his collection, and also the skill displayed in their culture by his energetic and capable gardener, Mr. T. Lofthouse.—J. C., *Lancashire.*

RHODODENDRON PRÆCOX.—Early flowers are always acceptable, and those who grow them would welcome the brief paragraph on this Rhododendron in a recent number of the Journal. With us in the North it is later than at Kew, but on March 5th it was fully covered with flower. But for the sharp frost which has occurred at night this early Rhododendron would have opened considerably sooner, as it was showing colour for some time before. Very beautiful is it now, and although the night frosts are yet keen they do not appear to do much injury to its bright purple blossoms.—S. ARNOTT.



HARDY FRUIT GARDEN.

Peaches and Nectarines.—*Protecting.*—The material employed for protecting the blossoms from frost should at once be affixed in front of the trees. The best method is that which utilises something moveable, so that light and air can be freely admitted on every favourable occasion. Scrim canvas or frigi domo are materials which will effectually exclude frost when they are dry, but they ought to be drawn up, or on one side during the day. Fish netting in double or treble thicknesses often proves sufficiently serviceable in warding off frosts at a critical time, and it has the additional advantage of not requiring daily removal, inasmuch as light and air can penetrate to every part of the trees. Whatever material is used it must not rest closely on the branches, though fish netting may be somewhat nearer without effecting any damage, provided wind does not blow it about. In the absence of a coping from which the protecting material can be suspended, poles may be placed against the walls well away from the trees at the foot, and firmly fixed in the soil. Over them stretch the material used, securing it firmly at each end and other points necessary for its safety.

Grafting Fruit Trees.—Large healthy old trees that fail to bear good crops, or produce fruit of some inferior or undesirable variety, may be induced to produce profitable crops of superior varieties by grafting. Very large old trees with thick stems ought, however, to have the branches shortened to near the point of grafting some time previously. All that is necessary then, when the period arrives for inserting the scions, is to remove a small portion of the branch, and the bark will be fresh and clean for the operation. The most commonly accepted method of grafting on branches of large diameter is crown or rind grafting. Several scions can be placed on one stock.

Preparing the Scions.—It is of the greatest importance to secure scions early in winter when perfectly dormant, preserving them in this condition until wanted for insertion as grafts. They are usually preserved in this way by laying them in soil under a north wall, only removing them for preparation previous to immediate insertion. The scions should be wood of the previous year, clean, uninjured, and in a well ripened state, with good bold buds. Usually the central parts of such shoots are the best, because the wood is firm, having bold buds. So far prepared the scion may consist of four buds. The lower end should be cut transversely. Just below the third bud commence a slanting cut to the base, forming a wedge. There only remains to be cut out a small piece of wood from the upper face of the slanting cut, this forming a seat by which the scion may rest securely upon the stock.

Preparing the Stocks.—The stocks having been cut transversely and the edges of the bark trimmed smoothly, make longitudinal slits downwards just through the bark the same length as the prepared portions of the scions.

Uniting Stocks and Scions.—The bark on each side of the incision for admitting the scion must be gently raised, pushing the scion carefully down until the upper end rests upon the stock. See that the inner bark or alburnous tissue of both stock and scion fits exactly on both sides if possible, but at least on one. Secure the united parts firmly with matting, and cover the whole well over with grafting wax or the preparation, which can be purchased ready for immediate use, known as Mastic l'Homme Lefort. All the joinings should be covered with the material and the face of the stock as well. This is very important, as the complete exclusion of air materially assists a speedy union.

Top-dressing Fruit Trees and Bushes.—The present is a suitable time to apply some fertilising material over the roots of trees and bushes that need assistance either to encourage freer growth during the succeeding season or to nourish the crop of fruit which the trees may subsequently carry. A mixture of fresh loam, decayed manure, and wood ashes proves of great benefit to Cherries, Apricots, Peaches, Nectarines, and Plums. Lime, chalk, or mortar rubbish may be required in soils deficient in calcareous matter, the latter being essential to stone fruits. The addition of a little bonemeal and muriate of potash is excellent for fruit bushes, including Red and White Currants, Gooseberries. They require to be fed liberally with phosphates and potash; bonemeal supplies phosphate. Black Currants need more liberal nitrogenous food in addition, owing to the necessity for them to form a fair amount of strong new wood each year, as well as perfecting the fruit. Similar dressings should be applied to Raspberries. Even without applications of chemical manures, bush fruits invariably succeed when farmyard manure is applied liberally over the roots and liquid manure given freely during growth. Liquid manure is excellent to apply to large old trees of Apples, Pears, Plums, which may have their roots deeper, especially when making deficient growth or showing other signs of enfeeblement.

FRUIT FORCING.

Figs.—*Earliest Forced Trees in Pots.*—Early Violet and St. John's, though small, are excellent first early varieties, and now as they advance towards ripening must be kept dry. This applies both to the foliage and the roots. Water, however, should be supplied to the roots so as to maintain

the foliage in health. Trees of Pingo de Mel and Brown Turkey swelling their fruits need full supplies of water and liquid manure until ripening commences, when a circulation of warm air will be necessary to secure well ripened high quality fruit. The temperature should be maintained at 60° to 65° at night, 70° to 75° by day from fire heat, 80° to 85° with sun, admitting air or increasing it from 75°, closing the house early so as to advance 5° to 10° afterwards.

Planted-out Trees.—These often grow too luxuriantly, and are frequently trained to walls at a considerable distance from the glass, so that they produce wood instead of fruit. This can only be overcome by lifting, restricting the roots, and training the growths thinly. When the foliage has abundance of light and the roots are plentiful in borders of limited area, the trees require liberal feeding. Fig trees with abundance of fibrous roots will take almost any amount of liquid manure without prejudice to the crop.

Vines.—*Earliest Forced in Pots.*—The canes started last November, and duly attended to in regard to heat, moisture, and other cultural requirements, have the Grapes swelled to a good size, and these are changing colour. The supplies of liquid manure should be lessened gradually, so as not to give a check, and the atmospheric moisture must be reduced. Allow a gentle circulation of air constantly, and damp the house in the morning and afternoon, as moisture is essential to the finishing of the Grapes. Maintain the temperature at 60° to 65° at night, 70° to 75° by day artificially, and between 75° and 85° through the day from sun heat, ventilating freely in fine weather.

Early Houses.—In the house started early in December the Grapes are rapidly advancing towards the colouring stage, and should be afforded a thorough supply of tepid liquid manure, mulching with a little partially decayed lumpy manure. With the border in a proper state of moisture and the stimulus given the roots, little, if any, further moisture will be needed by the border until the Grapes are cut. Continue damping at closing time until the Grapes are well advanced in colouring, after which reduce the moisture gradually, but provide a circulation of warm air by day and night.

Vines Started at the New Year.—When these are advanced to the flowering stage afford plenty of warm, rather dry air, with a temperature of 65° to 70° for Black Hamburgs and similar sorts, and 70° to 75° for Muscats. All shy-setting varieties should have their flowers gently rubbed with a camel's-hair brush. Varieties deficient in pollen may be supplied from those affording it freely. On no account allow the thinning to remain a day longer than is necessary to ascertain the best set bunches. Free-setting varieties, such as Black Hamburg, may be thinned as soon as the berries are formed, but Muscats and other shy-setting sorts ought not to be thinned until the properly fertilised berries are taking the lead. When the Grapes have been thinned, and are swelling, supply liquid manure in a tepid state, and mulch with about an inch depth of rather fresh lumpy manure, keeping it sprinkled from time to time, especially at closing the house. Admit air early and liberally as the heat increases, seeking to secure short-jointed wood and thick leathery foliage. Close early, with plenty of atmospheric moisture, raising the heat from the sun to 85° or 90°, and allow the night temperature to fall to between 60° and 65°.

Succession Houses.—Stopping and tying the shoots will need attention, not allowing these matters to fall into arrears, as large reductions of foliage are pernicious. Where the growth is somewhat restricted stop two joints beyond the bunch, pinching the laterals to one leaf; but where there is space for extension allow four or five joints beyond the fruit. After the space is occupied keep the growths stopped to one joint. Supply water or liquid manure to the inside border in a tepid state, and ventilate freely on all favourable occasions.

Late Houses.—Late Grapes started as previously advised will be swelling their buds. Syringe the Vines twice daily, and every surface ought to be damped in the morning and evening, closing the house with plenty of moisture at 75°. Inside borders will need repeated waterings to bring them into a thoroughly moist condition. A supply of liquid manure will materially assist weakly Vines, supplying it after making the border fairly moist. Outside borders must have a light mulch of some protective material.

Strawberries in Pots.—The north-easterly winds have not been favourable to plants in flower, mildew flourishing, and sulphur is much less effective against it in winter than in summer. In dull weather it is well to shake the flowers occasionally when the pollen is ripe, and to remove the smallest and least desirable, leaving the boldest, which are usually the first to expand, and they generally afford the largest fruit. Thin the fruits after they are set, leaving the number on each plant it is calculated to mature well. Colour and size are the chief points in a forced Strawberry, and a relatively few good fruits are better than many indifferent. The plants should be examined twice a day for water, supplying it where needed liberally, affording liquid manure two or three times a week when the fruit is swelling. Steady progressive growth is most favourable for Strawberries until after flowering, then they swell better in a high temperature, and moist but not very close atmosphere.

COMMON MISTAKES IN FRUIT CULTURE was the subject of a practical and instructive paper given by Mr. George Bunyard of Maidstone before the Reading and District Gardeners' Mutual Improvement Association on Monday evening last. Mr. C. B. Stevens presided over a large attendance of members. The paper was followed with the closest attention, and at the close a hearty vote of thanks was accorded to Mr. Bunyard.

THE BEE-KEEPER.

WORK IN THE APIARY.

It is an advantage at this season, before the busy time commences, to make a note of the necessary work to be done in the apiary, and also the requirements for the coming honey harvest. Owing to the fine weather experienced throughout the winter the hives standing in the open air are dry and in good condition for painting. We prefer autumn for this operation, as the heat from the sun will often cause the wood to crack, and the first fall of rain or snow will saturate the interior of the hive. There is nothing so penetrating as snow, but fortunately we have escaped a downfall during the past winter. But rain may be expected at any time; it is therefore wise to take time by the forelock and make all secure against wind and rain. It is not necessary to remove the hives under cover whilst this is being done, nor should the bees be interfered with, as the hives may have one or more coats of paint without any harm happening to them.

Good white lead paint is the best for outdoor work, as it stands heat, cold and moisture better and longer than any other mixture. Enamel paint is sometimes recommended, but however well it may answer when under cover free from sun and moisture, it is certainly not a success when used in the open air. The paint should be well worked into all the crevices, and if the roof is cracked or damaged in any way so that it is not watertight, it may be made perfectly secure if a piece of unbleached calico is placed over it and well saturated with paint. The most successful way of doing this is to cut the calico the desired size and paint it on one side, then place the wet side on the roof or whatever is to be covered, and strain it tightly over; another coat of paint on the outside will make it secure against wind or rain. Neither will it warp with the sun, while an occasional coat of paint will keep it in good condition for several years. This is of great advantage, as all bee-keepers know who have been troubled (and who has not?) with leaky roofs. A word of caution is necessary, not to paint the alighting board, or the entrance to the hive, unless it is done late in the evening when there is no danger of the bees leaving their hives.

EXAMINING OLD COMBS.

Another of the necessary things that may with advantage be done at this time, is the examination of combs that have been used in former years for extracting and other purposes, and have been stored away in boxes or cupboards for future use. Unfortunately mice are very fond of combs and honey, and have a happy knack of finding out where they are stored, and if there is a crevice through which they can nibble an entrance, if left undisturbed for a short time, will soon make their presence known by consuming the honey, if any remain in them, and disfiguring the combs, so that they are useless for the purpose for which they were intended, hence the necessity of an occasional examination. It is good practice to lift the frames out of the boxes or wherever they may be stored, and brush the dust from them; and if they were packed away as advised in previous notes, the same steps may be taken to prevent the moths gaining an entrance, as was taken in the autumn when they were first stored away.

We use unbleached calico for lining the boxes in which the combs are stored; this is sprinkled freely with carbolic acid, the combs are then placed in the box, and when the box is full carbonised cloths are placed over them. This is an inexpensive way of storing combs for future use, though there are other systems that are used for the purpose of keeping the wax moth away. Care must be taken that the carbolic acid is not sprinkled on the combs, otherwise it will be difficult to make them sweet again.

REDUCING ENTRANCES.

Entrances that have been left their full width throughout the winter may now be reduced to 1 or 2 inches, according to the strength of the colony, as owing to the open weather experienced throughout the winter each individual stock will be stronger than usual at this season, and breeding will be proportionately early. By reducing the entrances it will have a double advantage—namely, keeping the interior warmer; and also in the case of a weak colony preventing robbers gaining admittance, as it is well known how readily a strong stock of bees will clear out the stores from a weak colony. This is more prevalent during spring and autumn.—AN ENGLISH BEE-KEEPER.

HEPATICA ANGULOSA MAJOR.—The large-flowered variety of *Hepatica* or *Anemone angulosa* is now in full bloom. It is to be regretted that it does not flower so profusely as the varieties of the common *Hepatica*, and that no one has as yet been able to recommend treatment to overcome this failing.—A. HARDIMAN. [We have observed bees very busy on *Hepaticas* of late, but do not know if this is a common occurrence.]

TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **8, Rose Hill Road, Wandsworth, S.W.**, and **NOT** to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Wednesday Morning's Letters.—Letters and parcels which arrive on Wednesday morning can rarely be attended to, and replies published in the current issue. Some parcels and letters are delayed in delivery through being misdirected. The correct address for everything intended for the Editor is given above.

Brunswick Figs Collapsing (Wilts).—Mr. Wythes finds this variety to fail in the same way as yours if any material extent of growth is permitted beyond the fruit. He pinches very closely, about 2 inches beyond the first crop fruits, and allows of any needed growth extension afterwards. Excessive syringing aggravates the evil. This is all that can be said at present. The subject shall have further attention.

Cucumber Pests and Red Spider (A. R. W.).—There is no book treating of Cucumber pests and diseases, but most of them have been dealt with from time to time in our columns, and "red spider" has been frequently referred to. But of this you will find a full account in Miss Ormerod's "Manual of Injurious Insects," page 135, and also in most works on gardening. We are always pleased to report on any specimen submitted to us, and advise as to prevention and remedies, this often being more to the purpose than reference to technical works which do not give information on the particular points desired in special cases.

Deformed Vine Shoots (S. D.).—The three young shoots are free from any disease of an organic nature, but are what is known as "lagging"—that is, not so forward as the generality of the growths, and have a stunted appearance. We have found it most prevalent on young Vines, especially when strong and long pruned. The canes have usually a large pith, with the wood along it more or less dried, so that sap does not flow freely in the vessels, while the cambial layer is thin, and the growths poor in consequence. In other words, the condition arises from indifferently formed and imperfectly ripened wood. As the soil is rather heavy, we should use water moderately, so as to avoid sappy growths, securing a sturdy development.

Dwarfing Tomatoes (S. German).—The plan you propose to follow will answer very well if you give plenty of air as well as restrict the pot room. Encourage surface root formation by the top-dressings of loam, calcareous and sandy material, this tending to stiffen the plants and induce a short-jointed floriferous habit. We should not use sulphate of ammonia, but a little dissolved bone manure, this containing sufficient stimulating food, adding about half as much nitrate of potash, and giving a slight dusting of the mixture, or better mixing a small handful with about a peck of the loam used for top-dressing. In planting out take care to have the soil firm, so as to maintain the sturdy habit and secure solid growth.

Chrysanthemum Leaves Discoloured (H. H. M.).—The leaves of the three plants are discoloured by some injurious application, most likely by using the water drawn directly from the hot-water pipes, an extremely pernicious practice, as the water is more or less impregnated with iron or in a state as to cause "rust" and death in foliage with which it comes in contact. This, and this only, appears all that is wrong with the plants, as there is no parasitic micro-organism present, the mould on the dead leaves being entirely saprophytic, or only attacking tissue already damaged or killed. There is certainly no leaf rust fungus (*Uredo chrysanthemi*), and in this respect we congratulate you, also on discontinuing the use of water from the hot-water pipes, and in trying that from a different source. This, we trust, is soft and sweet; then by not syringing, you may secure clean healthy growth.

Dendrobium nobile (W. J. P.).—The varieties of *Dendrobium nobile* sent are very fine. No. 1 comes very near to the variety *nobilis*, and we would like to see it another season. No. 2 is *D. n. albiflorum*, the purplish tips being not unlike those of the sub-variety *Rajah*. They are both much above the average. All the flowers sent indicate cultural merits, for they are clear in colouration and of good substance.

Lilium speciosum rubrum (Amateur).—You are right in supposing this to be synonymous with *L. lancifolium rubrum*. In the majority of instances you will find a 6 or 7-inch pot will do for a strong bulb of this *Lilium*. Drain the pot well, and on that place some rough peat and loam, filling the pot about half full. On this set the bulbs, and just cover all except the point, and then set the pots on the floor under your stage, and give little water until the stems begin to move; then bring them into the light, and earth up as the stem grows. After the end of May a sheltered place out of doors will suit them as well as the greenhouse or cold pit. When growing freely they require plenty of water.

Carnation Cuttings (D. S. R.).—The best cuttings of Perpetual flowering Carnations are those 3 or 4 inches long, detached with a heel, cut transversely or pared smooth, the lower pair of leaves being removed. The compost should consist of turfy loam, leaf soil, and sand in equal parts (mixed), and just moist, not wet. Insert each cutting in a thumb pot, using a little sand; press firmly, and plunge the pots two-thirds their depth in cocoa-fibre refuse in a frame kept close, and with a bottom heat of about 65° to 70°. In four days if bright, or a week if dull, the cuttings may be watered, giving enough to moisten the whole of the soil, leaving the lights off until the tops of the cuttings become quite dry, then replace. Continue this procedure until the cuttings are rooted, then gradually inure them to the air of the house, harden and shift into larger pots.

Spotted Tomato Leaves (Wakofa).—The four leaves are not infested by any cryptogamous parasite or animal micro-organisms, but quite normal, the spots being due to defective chlorophyll development, this probably arising from the cause you name—that is, comparative soil exhaustion through the plants being rather root-bound. The high temperature would have a tendency in the direction referred to and not do any harm, provided the ventilation corresponds to the heat and allows evaporation of moisture to proceed from the leaves. This hardening process renders the plants more disease-resistant, and has a deterrent effect on certain fungi, especially the most hurtful, such as the Potato disease fungus, *Phytophthora infestans*, and also on "black stripe" parasite, whilst promoting an early floriferous habit as the result of the higher elaboration and concentration of the juices.

Growing Buckwheat as Food for Poultry (W. H.).—Buckwheat (*Polygonum Fagopyrum*) was first brought to Europe from Asia by the Crusaders, hence it is often called Saracen corn. The plant will not endure our spring frosts nor those of early autumn, hence the seeds must not be sown till warm weather sets in during May. The flowers appear about July, and are excellent for bee flowers. The seeds ripen in late September or October, but so tender are the plants that a single night's frost will destroy a whole crop. It is best sown in drills similar to Beans, the plant growing about 30 inches high, and producing small triangular grains of a brownish black without and white within, in great profusion, much relished by partridges, pheasants and poultry, hence buckwheat is commonly grown near preserves for winged game to feed on to their heart's content. English grown seed is best, and two bushels will sow a statute acre. Gamekeepers get the land into good tilth by the middle of May, then either drill the seed or sow broadcast and lightly harrow in, and keep the ground clear of weeds. Light sandy soil just suits Buckwheat, as it likes warmth, and seeds all the better in poor rather than rich land. The seeds are excellent food for poultry, as also are Sunflower seeds; we have grown both largely for fowls and game.

Leaves of Buckland Sweetwater Vines (G. C.).—The leaves are suffering from what is known as browning or "brunure." We failed to find anything of an organic nature, certainly not any fungus, and the slight stain in the cells hardly betrays the presence of *Plasmidiophora vitis*. Therefore we should attribute the effect to the constitutional defects of the Vine, the variety not being so strong as many others, and has been prejudicially affected by the roots having to collect nutrition from an outside border. We have noticed it before under similar circumstances, and in this variety more than other Sweetwater Grapes. It also arises from the house being kept rather close and moist for several days, and then on a return of bright weather the admission of air, no matter now carefully, causes a relatively excessive evaporation, what is generally termed a chill. Really, however, the roots do not supply the requisite amount of water, and the tender growths suffer in consequence. The only really effective preventive in respect of this variety in an outside border is to have it on the Black Hamburgh, on which we find it to succeed better than on its own roots, and even inside the Vines suffer more from "brunure" than other varieties except Muscat of Alexandria.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once,

and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (R. C. N.).—*Leucathoea Catesbaei*. (F. G.).—*Oncidium luridum*. (Young Gardener).—1, *Ilex aquifolium*; 2, *I. a. ferox argentea*; 3, *I. a. crispa*; 4, *I. aquifolium*, variety unknown; 5, *I. a. nigrescens*; 6, *Cupressus sempervirens*. (C. G.).—1, *Kerria japonica* fl.-pl.; 2, *Aucuba japonica* (male form); 3, *Cedrus atlantica glauca*; 4 and 5, slightly differing forms of *Abies sachalinensis*; 6, *Berberis Darwini*. (E. H.).—*Staphylea colchica*, a hardy deciduous shrub extensively employed for forcing.

COVENT GARDEN MARKET.—MARCH 23RD.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1 6	to 4 0	Grapes, lb....	2 0	to 3 0
Cobs ...	21 0	22 6	Lemons, case ...	11 0	14 0
Filberts, 100 lbs.	0 0	0 0	St. Michael's Pines, each	2 6	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz....	1 0	0 0	Parsley, doz. bnchs....	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle... ..	1 0	0 0
Coleworts, doz. bnchs.	2 0	4 0	Scorzonera, bundle ...	1 6	0 0
Cucumbers... ..	0 4	0 8	Seakale, basket... ..	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms 1 ...	0 6	0 8	Turnips, bunch... ..	0 3	0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ferns, small, 100 ...	4 0	to 8 0
Aspidistra, doz. ...	18 0	36 0	Ficus elastica, each... ..	1 0	7 0
Aspidistra, specimen ...	5 0	10 6	Foliage plants, var., each	1 0	5 0
Azalea, per doz. ...	24 0	36 0	Hyacinths, doz. pots ...	8 0	12 0
Cineraria, per doz. ...	6 0	9 0	Lilium Harrisii, doz....	12 0	18 0
Cyclamen, per doz. ...	9 0	18 0	Lycopodiums, doz. ...	4 0	6 0
Dracæna, var., doz. ...	12 0	30 0	Marguerite Daisy, doz. ...	6 0	9 0
Dracæna viridis, doz. ...	9 0	18 0	Mignonette, doz. ...	6 0	12 0
Erica hyemalis, per doz....	9 0	15 0	Myrtles, doz. ...	6 0	9 0
„ gracilis, per doz. ...	6 0	9 0	Palms, in var., each... ..	1 0	15 0
„ various, per doz. ...	8 0	12 0	„ specimens ...	21 0	63 0
Euonymus, var., doz. ...	6 0	18 0	Pelargoniums, scarlet, doz.	4 0	6 0
Evergreens, var., doz. ...	4 0	18 0	Tulips, various, doz. bulbs	0 9	1 6
Ferns, var., doz. ...	4 0	18 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2 0	to 4 0	Mimosa or Acacia, bunch		
Arum Lilies, 12 blooms ...	2 0	3 0	(French) ...	0 9	to 1 0
Asparagus, Fern, bunch... ..	1 6	4 0	Narciss, white (French)		
Azalea, dozen sprays ...	0 4	0 8	dozen bunches ...	2 6	5 0
Bouvardias, bunch ...	0 6	0 9	Orchids, var., doz. blooms	1 6	12 0
Carnations, 12 blooms ...	1 0	3 0	Pelargoniums, doz. bnchs.	6 0	9 0
Daffodils, doz. bunches ...	3 0	8 0	Primroses, doz. bunches... ..	0 9	1 0
Eucharis, doz. ...	3 0	5 0	Roses (indoor), doz....	0 6	1 0
Euphorbia jacinthiflora,			„ Red, per doz. ...	3 0	5 0
per bunch ...	1 0	2 0	„ Tea, white, dozen ...	1 0	2 0
Gardenias, doz....	4 0	6 0	„ Yellow, doz. (Perles)	1 6	4 0
Geranium, scarlet, dozen			„ Safrano (English) doz.	1 0	2 0
bunches ...	4 0	6 0	„ Pink, dozen ...	4 0	8 0
Hyacinths (Roman) dozen			Smilax, bunch ...	1 6	2 0
bunches ...	4 0	6 0	Snowdrops, 12 bunches ...	0 9	1 6
Lilac (French), bunch ...	3 0	4 0	Tuberose, 12 blooms ...	0 9	1 6
Lilium longiflorum, 12 blms	4 0	6 0	Tulips, dozen blooms ...	0 6	1 0
Lily of the Valley, 12 sprays	0 6	1 3	Violets, dozen bunches ...	0 6	1 0
Maidenhair Fern, dozen			„ Parme (French),		
bunches ...	4 0	8 0	bunch ...	3 0	4 0
Marguerites, doz. bunches	2 0	3 0	Wallflowers, doz. bnchs....	3 0	5 0
Mignonette, doz. bnchs....	2 0	4 0			



OUR HORNED STOCK.

In the summer season the whole country is alive with agricultural shows, big and little, from the exhibition of the Royal Society of England to the small village foal show. These are all of great educational value, provided they are used in a proper spirit. Only the choicest and best of everything is seen, and the competition is at times so severe that only *la crème de la crème* finds place or position. So far so good, but does the object of the show end when

the ribbons and medals and prize money have been distributed? Hardly. We show the best sires and dams we can produce as a stimulus to others to follow our line, and to do as well, if not better. But this is all of little use, and the show yard an empty object lesson, if people will go on year after year breeding on the same old lines; breeding in-and-in, and knowing little, and caring less, what sort of stock they have as long as it is stock.

Nothing will get over the fact that a badly bred horse or beast will consume just what a good one does, and in the long run hardly realises what will pay for his keep. "Penny wise and pound foolish." We see it again and again. How many homesteads may we visit and find all the draught horses old, worn out, with many, many screws loose; and on a winter's day a look in at the crew yard is very instructive as to the "how not to do it." It is just the same all through the category, even down to the mongrel sheep dog. It would be a queer herd if there were not some cows of fairly decent type, and if their weak points were taken into consideration when the choice of a mate was made there would be every chance of improvement in the progeny.

Surely this is not a hard matter—it is a poor neighbourhood if it cannot produce a few good sires whose services can be had at a reasonable fee. Nothing pays better for an ordinary farmer who grazes part and milks part than the purchase of a really good Short-horn bull. Surely there are sales enough over the country, and it does not take the wisdom of a Solomon to pick out a decent beast. If money is an object buy a six or nine months old calf; his keep will not amount to much, and he will grow into money. If you have no reliance on your own judgment there are plenty of auctioneers who will get you the right article on commission, and probably at a less figure than you would yourself.

To anyone who knows much of agricultural movement, the name of Sir Jacob Wilson is familiar. Of a good old Northumberland family, years ago he was the Northumberland Agricultural Society, its life, its moving spirit. Nothing makes a show go like an active secretary, and he raised the Northumberland Show to a high position. Public duties made him relinquish his post some years ago, but the spirit of enterprise is still alive, and it has fallen to the lot of that society to make a new movement which must prove of the greatest possible benefit to the tenant farmers of the county. It is only right that the Northern counties should take the initiative in this matter, for to them belongs the glory of all the traditions of the first Shorthorn breeders.

The Society has resolved to devote the sum of £300 to the purchase of pedigree bulls for the use of the farmers of the county. Members of the Society are expected to pay a fee of 4s., and non-members whose rental does not exceed £50. Now this last we think is a grand idea. The richer farmer would not be likely to grudge a fairly large service fee; but to the poor man, whose shillings are few, the fee is of great moment, and it is so necessary that he with his one or two cows should be able to make the most of their produce, and get his young stock early into the market. Badly bred beasts, like Pharaoh's lean kine, are never fat. One bull within a radius of five miles. He is to be kept by a farmer who will receive as payment for his keep the service fees. Is not this a much better plan than the one that has been suggested—namely, that animals should be provided on the same lines as the Queen's premium horses? We think so. We have always advocated that self-help is by far the most valuable. We do not much believe in the bounty system, and surely other agricultural societies might take example, and go and do likewise.

If we mistake not, a few years will show such improvement in the stock of Northumberland farmers as will surprise many weak minds. We need only instance what has been done in our own neighbourhood in the matter of draught horses since the introduction of a Shire horse stud by a landed proprietor. At the annual local show can be found mares and foals fit for any company, and buyers are attracted from all parts. Times do not allow of any second-class stock; the best, or none at all.

We have just been reading a few statistics of the stock revival in

the States, and we must bear in mind six days will bring a cargo from New York to Liverpool. If we fail to provide meat, America is ready, and increasingly ready. January 1st, 1898, shows an increase in the value of horses, mules, cattle, sheep, and pigs of £30,000,000 over the January of 1897. All their stock is increasing in value per head. They are tired of breeding inferior cattle, and will now only have the purest and best. Texas can show a million more cattle than are found in all England, and the State of Iowa, which is by no means a large one, can produce as many as we have. The States, as a whole, have 32,000,000 cows in milk, and of a good type. The Americans have found out that there are cows and cows, and they intend that their dairy cows shall be real "fill pails."

No wonder we see plenty of American bacon with 50,000,000 pigs, and power to add to their numbers; truly these figures are stupendous. They always do things on a big scale in America. We cannot hope to beat them in numbers, but we still think we might do a good deal to beat them as to quality.

WORK ON THE HOME FARM.

Very sharp frosts and dry warm days have been the rule the last week. We have stopped the drill, as the frost has not disappeared generally until ten or eleven o'clock, and the land is still a little rough. The fact is, we want rain to make drilling go really well, and a nice soaking would do good everywhere. We can hardly expect to get enough to replenish the springs, for they are very low, some being already dried up. This is a very serious state of affairs, and nothing but a moist summer can save us from very great inconvenience, if not disastrous loss of stock, for without rain a water famine there must be.

We never knew such a favourable time for cleaning land, and little remains to be done in that direction. The dry condition of the soil is in favour of ploughing down land meant for Turnips, and leaving it as close and firm as possible until almost the time to sow; the moisture will thus be best retained, and no chance of a Turnip plant will be thrown away.

Potatoes are being planted very favourably, as we like to see them in a dry seed-bed if the tilth be good. We are giving phosphate and kainit with the sets, and shall give nitrogen as a top-dressing. We are planting Up to Date on the weakest land; it is inclined to get too large on good soils. We are putting Elephants into the medium, and Her Majesty into the best soils, whilst we are not entirely forsaking Bruce, which has proved a good friend under very varying conditions.

Lambing progresses slowly but satisfactorily; the crop is not heavy but fair, and losses so far are insignificant.

A cow which presented us with twin calves last year has done the same again; the juveniles are small but healthy, and we should like the mother to continue in such a good way.

Roots are still plentiful, though not quite so abundant as a month ago, and pastures having been much cut by frost there is a little anxiety in some quarters as to the April food supply. Feeding sheep have never done better than this winter, roots have been sound and good, and layer has been so dry that lameness can but have been caused by culpable neglect.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1898. March.	Barometer at 32° and Sea Level	Hygrometer		Direction of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.			
		Dry.	Wet.			Max.	Min.	In Sun	On Grass		
	inches	deg.	deg.		deg.	deg.	deg.	deg.	deg.	inches.	
Sunday 13	30.106	35.4	34.5	N. W.	37.8	50.4	25.1	75.1	22.8	—	
Monday 14	29.953	43.9	41.9	W.	37.9	50.4	34.9	68.7	28.6	0.032	
Tuesday 15	30.053	39.2	35.3	W.	38.2	52.6	27.3	84.9	23.4	—	
Wednesday .. 16	29.988	48.6	46.6	W.	39.4	56.1	39.8	91.7	31.6	—	
Thursday .. 17	30.036	49.1	46.1	W.	41.0	56.2	43.7	83.6	27.3	—	
Friday 18	29.979	52.2	49.9	W.	42.7	59.1	48.7	91.9	43.7	—	
Saturday 19	29.879	52.8	48.2	W.	44.0	56.5	48.8	76.1	44.1	0.173	
	29.999	45.9	43.2		40.1	54.5	38.3	81.7	31.6	0.205	

REMARKS.

- 13th.—Overcast morning; sunny afternoon, and fair evening.
 14th.—Overcast, with spots of rain early; showery between ten and noon; generally sunny from 1 P.M.
 15th.—A little fog early, but sunshine nearly throughout; halo in afternoon.
 16th.—Alternate cloud and sun, and threatening about 1 P.M.; clear night.
 17th.—Overcast morning; occasional sunshine in afternoon.
 18th.—Fine, and frequently sunny.
 19th.—Generally overcast morning; drizzle from 3 P.M., and almost continuous rain from 4 P.M. to 10 P.M.
 A fine week, and the latter part warmer; rain still below the average.—
 G. J. SYMONS.

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THE GRAND NEW MONARCH, finest main
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JAS. VEITCH,
LATEST OF ALL,
SCARLET QUEEN,
BRITISH QUEEN,
COMPETITOR,
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COMMANDER,
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No. 1,

KEEN'S SEEDLING,
LA GROSSE SUCREE,
PRESIDENT,
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ELTON PINE,
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AND
ROYAL SOVEREIGN.

Packed with the pots at 10/- 100, or turned out of pots and
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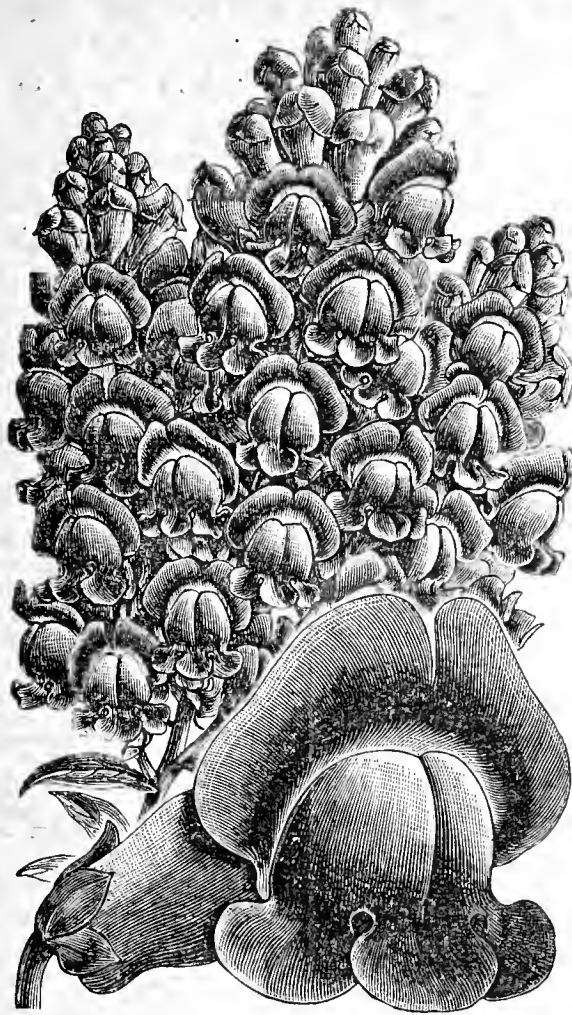
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HANDSWORTH, 5 to 7 feet, 30/- to 72/- doz.
VARIEGATED, 5 to 6 feet, 30/- to 42/- per dozen,
CEDRUS ATLANTICA, 10 to 12 feet, 15/- each.
DEODARA, 10 to 12 feet, 15/- to 21/- each.
CUPRESSUS LAWSONIANA, 8 to 10 feet, 60/- to 84/- doz.
ERECTA VIRIDIS, 5 to 6 feet, 60/- to 72/- doz.
HOLLIES, GREEN, named varieties, 6 to 8 feet, 72/- to 96/-
per dozen.
JUNIPERUS CHINENSIS, 8 to 10 feet, 72/- per dozen.
LAUREL, 5 to 7 feet, extra bushy, 30/- to 42/- per dozen.
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PICEA PINSAPO, 10 to 12 feet, 15/- to 21/- each.
RETINOSPORA PLUMOSA AUREA, 6 to 7 feet, 60/- to
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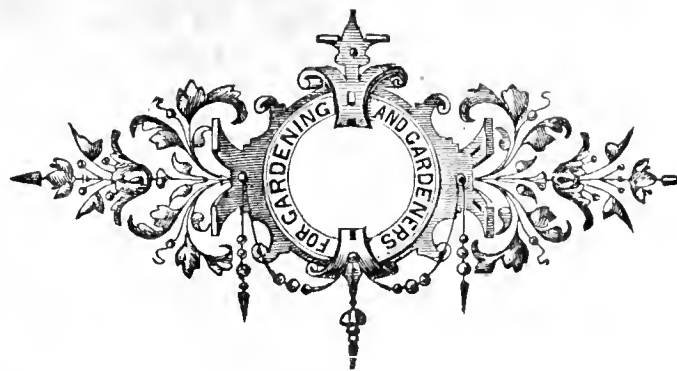
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Journal of Horticulture.

THURSDAY, MARCH 31, 1898.

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WINTER AT LAST.

PROSPECTIVE FRUIT CROPS.

MANY have been the rejoicings over the
remarkable, if not unexampled, continuance of
balmy days throughout the period which, accord-
ing to custom, ought to have been winter. On
another page of the present issue of the *Journal*
of *Horticulture* a meteorological correspondent tells
us that at his salubrious station on the south-west
coast—Torquay—the temperature of the past five
months—October to February inclusive—has been
upwards of 14° above the mean average of twenty-
two years' observations. This may be taken as
fairly representative of the "winter" throughout
the country generally, for the abnormal mildness
seems to have prevailed in Scotland about equally
with the South of England.

The effect of it was to bring records, in shoals,
from practically all parts of the kingdom, including
the Emerald Isle, of the wealth of flowers in gardens
and fields. Sunny banks appear to have yielded
Violets and Primroses all the time, and summer
Roses did not cease blooming in favourable positions
until the real winter came, in what the calendar
tells us ought to have been spring. It was felt and
believed by thousands of people, more particularly
those with minds still young, that spring—the
real "spring of gladness and hope"—had come
before its time, and come to stay.

Even some, and perhaps not a few, persons who
have passed the meridian of life may have been
half beguiled into the hopeful belief that winter
had done its best, or worst, to gain pre-eminence.
Yet there were lurking misgivings. He was not a
youth who wrote about a month ago, "With all
the charms incident to the season, spring some-
times has an unkind welcome. Winter yields not
the sceptre without a struggle, and many are the
combats between the two. There are advances and
retreats on both sides; days of sun and soft rains,
days of gloom and snow showers; nights of
mildness of calm and nights of frost and storm.
Still, inch by inch winter has to yield." Nothing
could be more truly descriptive of the fitfulness of
March weather than that, and no prognostic more

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sure of realisation, though the victory of spring was not so near as the cautious writer appears to have thought.

He could not have anticipated the violence of the onslaught—let us hope a last despairing effort of determined winter to assert its crushing power—than that which overswept land and sea on Thursday night last. A “night of frost and storm” it surely was, followed by a day of “gloom and snow showers” driving with bitter and relentless force not soon to be forgotten. No one during the flowery days of February was bold enough to predict that before March was out trains would be snowed up in railway cuttings, and country roads rendered impassable for a time by drifting snow; yet such was the chilling fact.

The 25th inst., when the almanack spring was four days old, was truly described in one of the newspapers as “in every respect worthy of midwinter in its most dreary aspects.” Snow fell all the morning, the north-easterly wind driving it and the subsequent sleet to and fro with such fierceness that some of the hardy ’bus drivers of London were driven in turn to resort to the feminine protection of gauze veils. At no time did the thermometer rise more than 4° above the freezing point, and the day is said to have been the coldest that has been experienced in March since 1879.

Reports state that in the Thames Valley such a formidable blizzard has not been experienced for many years, and that much damage was done to the trees in the royal parks of Bushy and Richmond, while in Kew Gardens the damage sustained is said to have been very considerable. From Ashford, in Kent, we are informed that in addition to the snow filling the roads and stopping traffic, the frost was of such severity as to destroy the buds of Apple, Pear, and Cherry trees over a large area of plantations, and the fruit crops must consequently be a complete failure. We hope the results will not be so serious as are at present feared, and suspect that, generally speaking, sufficient fruit buds will be found to have “weathered the storm,” but the crucial time for fruit blossom is not yet over.

That March is a month of “many weathers” is proverbial, and seldom can there have been greater contrasts than have recently been experienced. On the first day of the month the radiation temperature in the sun was 85·6°, and on the third day 87·3°, while on the 16th and 18th it exceeded 91°; on the 20th it rose to 92°, and even on the 24th, 83·6°; but on the very next day we were plunged into the bitterest winter of the season, a fall to the minimum shade temperature of more than 54°. Fortunately low night temperatures had prevailed for some time previously, for had the spring-like weather of February continued much longer the effects of the recent frosts and driving ice winds on fruit trees must have been disastrous. The cold wave that cut short the beauty of spring flowers was just in time to check and retard the too precocious blossom buds, and may still prove, as we hope it will, to have been a blessing in disguise.

In one respect, and an important one, the fall of snow and rain must do great good in many districts. The under stratum of soil was never drier at the season of the year than it is now, and the roots of trees in many orchards and gardens can only be reached by heavy and continuous rains. If these do not come, the possible danger of loss of fruit through spring frosts that yet may occur will not be the only danger to be feared, for fruit may set, yet fall in shoals through lack of adequate moisture in the soil where the roots are searching for it to meet the requirements of foliage and fruit.

Orchard trees cannot be effectively watered, but it may be well to give a thought to fruit trees against walls in dry locations. The rainfall is greatly in arrear, the springs in many places are as feeble as they were at any time last summer, watercourses as low, and the subsoil over a great extent of country as dry as the time-honoured bone—a condition the reverse of favourable to the setting, and especially the swelling of fruit.

A gentleman had a fine Cherry tree, that was white as a sheet with blossom annually, but for years the incipient fruits were shed. The subsoil on examination was as dry as powder. He was advised

to make numerous deep holes with a crowbar, and fill them with water time after time, follow with liquid manure, and then close them with fresh soil. The fruit set and remained. He has since repeated the process, and had several bountiful crops of cherished fruit. The outlook in respect to soil drought and the water supply is in some districts a serious one, and the inconveniences and loss resulting may be far greater than from a blizzard in March.

As we are preparing for press, Mr. H. Harris sends a concise record of “A Week’s Weather in Sussex,” which is not lacking in variety. He refers to last week:—“Monday—fine, sunshine, cold winds. Tuesday—sharp frosts, heavy thunderstorms. Wednesday—vivid lightning, heavy rain. Thursday—hail, hurricane, deep snow. Friday—blizzard. Saturday—thaw and fog.” Truly, as he says, the month just closing has justified its character of “March many weathers.” At the moment of writing, the bright sun and soft wind suggest that four lines by “A. R.,” in the “Westminster Gazette,” are not inappropriate as a welcome to April:—

“Hail, gentle spring, fair comer hail!
Crown the bare trees with misty green,
And smother every hill and dale
In flowery sheen!”

DAFFODIL LAND—TRESKO.

THE streets and squares of London, and most of our large provincial towns, owe much of their cheerful aspect in early spring to the presence of the Daffodil, the Primrose, and the Violet. In the more open parts fountain, statue, and lamppost are bright with golden tones, and fragrant with the scent of Violets. It must be a boon to clerk and warehouseman, cooped for hours in close dark rooms, to be able to refresh the eye for a moment with glimpses of cheerful colour and fragrance, suggestive of the open air, green fields, budding hedgerows, and tuneful birds.

It is, however, a far greater treat to see these flowers at home. When our gardens are bare and flowerless, except for a few scattered clumps of Snowdrop and Crocus, the gardens of Lily-land are bright with glittering colour, and fragrant with the delicate, yet pungent, scent of the Narcissus. What one may fairly call the “Home of the Daffodil” is the archipelago of sunny isles and granite rocks known by poets as the Land of Lyonesse—the Isles of Scilly. During early April one may see the flowers at their best. Tons of them already are despatched weekly to London and the great towns. Notwithstanding the apparent advantages of climate in the South of France buyers prefer the Scilly flowers—they arrive fresher, and in better condition.

During the spring and summer, steamers ply twice, and at times thrice, a week between Penzance and St. Mary’s, the largest of the Scillies. The voyage, in fair weather, is done in less than four hours, the distance being thirty miles from Penzance, and about twenty from the Land’s End. The trip is worth taking if only to see the magnificent cliffs. As one steers out of the harbour there is a capital view of the town, with the masts of merchantmen cutting the terraces of buildings that climb the hill. To the left, or eastward, about two miles distant is St. Michael’s Mount, rising from the blue waters like a vision in stone. A score miles across the bay the Lizard dips, while westward is the Land’s End.

After about an hour’s steaming, passing by the way the beautiful Lamorran Cove and Porth Quorra we come abreast of the Land’s End, catch a glimpse of the Longships Light, and soon feel the roll of the huge Atlantic waves. If the reader be no better seaman than the writer, the feeling is quite sufficient, and notwithstanding the magnificence of tumultuous seas, one prefers a seat beneath the bridge, and a nearer view of the machinery. In a further two hours one catches sight of the first of the Scillies, St. Martin’s, distinguished by a tower with broad bands of white, known as the “Day Mark.”

The Daffodil has been a favourite flower in English gardens for centuries. Only two kinds, however, are known to grow wild in our fields—Shakespeare’s “that comes before the swallow dares,” the Pseudo-Narcissus, of which Wordsworth sings; and biflorus, found

in Devonshire. It belongs to an order of plants of which *Amaryllis* is a type. Lay open the flower with a sharp knife. If it be a Daffodil the six stamens are of equal length and in one series. They have insertion low down in the tube. In the true, or Poet's *Narcissus*, the tube is longer and narrower, while the stamens are divided into two sets of three each; one set appears near the mouth, the other is lower down in the tube.

Standing on the quay at St. Mary's one sees across the Strait, here over two miles across, a wooded island with a stately house on its summit. A small steam launch runs to and fro daily. On landing, our attention is arrested by a semi-tropical vegetation, the most conspicuous objects being *Agaves* in flower, a score feet high, tall Palm-like *Dracænas*, and New Zealand Flax. *Tresco*, though only four miles in circuit, has a variety of scenery, open moorland, grand cliffs, and sandy beaches. Deliciously quiet and beautiful the blue waves glide up, silver-fringed, to lap the dove-coloured sands. But it is not always so. At times the visitor is a prisoner for weeks together, and, were it not for the telegraph, one might as well be in mid-ocean. In Westminster Abbey there is a monument to Sir Cloudsley Shovel, who, returning from the capture of Gibraltar, was driven ashore at St. Mary's. The fleet was wrecked, and nearly all the homeward bound were lost. A few trees mark the spot where they were buried.

Presently the *Lyonnesse* winds its way towards the rough but substantial stone quay at St. Mary's. We are hauled up an extemporised ladder, and once again rejoice in stepping on terra-firma. An eminently prosperous and respectable race these *Scillians*, though grave and reticent. St. Mary's and the neighbouring Isles, in summer at least, are a delightful resort for the artist and the naturalist. It was here, it may be remembered, that Mr. Brett, R.A., painted some of his best pictures. There is a peculiarity in the light, owing probably to the abundance of watery vapour—sunshine, but no shadows. Whilst approaching St. Mary's one is struck with the beauty of the sea. The colour varies, of course, with the depth, the varying light, opal, emerald and purple—bluer than sheets of *Hyacinth*, stretching away along the woodland vistas; greener than the fresh sprung grass beneath the Apple trees, where the lambs are skipping; with now and again a path of molten gold leading up to the great Sun's centre, as if He had again walked its surface, leaving behind Him footprints on the sea.

Nearly a thousand years ago, we are told, the island of *Tresco* was the seat of a Benedictine abbey. Being far away from help, it suffered repeatedly at the hands of French and Spanish marauders. That pile of rusted cannon balls by the ruined abbey wall was exhumed during excavations from time to time. Queen Elizabeth, to avoid further complaints, gave the island to a Godolphin, strong enough to protect it. It was from a descendant that the late Lord-Proprietor, Augustus Smith, purchased *Tresco* and the neighbouring islands. The present proprietor, Colonel Dorrien-Smith is a nephew of Augustus.

It is chiefly at *Tresco* where the "Lilies" are grown. The Daffodil is a hardy plant, needing no protection except from the boisterous winds. This is afforded chiefly by evergreen hedges—*Euonymus*, *Veronica*, *Tamarisk*, and *Escallonia macrantha*. The latter is a shrub with stiff, glossy evergreen leaves and trusses of rosy, trumpet shaped flowers. The plant was introduced by the late Mr. Augustus Smith. It luxuriates in the mild, salt-seasoned air of the *Scillies*, and will make a fence from cuttings 4 feet in height in as many years. There is a fresh-water lake beneath the hill, and on the slopes the flowers are grown by acres, from the grand Empress, Emperor, Sir Watkin, Horsefieldi, to the tiny nanus and Angel's Tears. The soil is a smooth, brown, silky loam, largely mixed with sand. It is not only the *Narcissus* that is largely grown at St. Mary's and *Tresco*; there are others of the Lily tribe, besides acres of *Stocks* and *Wallflowers*, which are ready for market weeks before ours. Perhaps the brightest bit of colour is *Anemone fulgens*—a dazzling scarlet. One of the tribe, it may be remembered, clothes the hill sides of the Riviera.

One must say a word about the world-famed gardens, for there flourish all the year round Palms, Tree Ferns, *Dracænas*, *Agaves*, huge *Hydrangeas*, *Fuchsias*, and the handsome *Phormium tenax*, or New Zealand Flax. The gardens—a series of terraces, crossed transversely by paths and stone steps, are filled with rare flowers and shrubs. One enters, in response to a courteous invitation by the rock garden, and we are surprised (I am speaking of June now) by the masses of brilliant colours—*Mesembryanthemums* chiefly, from pure white, various shades of yellow, rose, scarlet, mauve, purple, and crimson. The flower evidently delights in bright sunlight and sea air; everywhere it is at home here in *Tresco*. Pieces of it flung aside alight on a stone wall, take root in a few days, and present a delightful bit of colour. One of a larger kind bears canary-coloured flowers, and rambles unchecked along the beach in dense masses.

Ferns are not very abundant at *Tresco* or St. Mary's. I noticed a few tufts of the Sea Spleenwort, *Asplenium marinum*, on the rocks by Cromwell's Castle, and a strong stool of *Osmunda regalis*. The Heather luxuriates, and is especially charming where sheltered.—HERGA.

LAWNS AND ALLIED SUBJECTS.

(Continued from page 215.)

SUPPOSING the lawn site, either for turfing or for seeds, to have been primarily levelled according to whatever slope or fall has been decided upon, and that a certain amount of consolidation of the soil by tramping or other means has been uniformly given to it, the finishing process by surface levelling is one requiring some little amount of skilful management. If this is done in tolerably small sections where turf is to be employed it will be conducive to a good finish, the object being to have the least amount of traffic possible on the prepared ground. With this end in view, light shutters made by nailing three or four boards together with cross laths (the flat side to be always down when using) with a few long, light planks will be found a satisfactory way to avoid undue tramping upon the soil. On a large scope of ground this may possibly be considered superfluous. I do not think so, even in fine weather, which of course should always be taken advantage of if possible. In any case, for a tennis or croquet ground I should insist upon their use. In theory the turf-beater and roller will reduce all to a smooth plane, but in practice they do not always prove to be so effective. Care must be taken to cut the turves of a uniform thickness, and not of unwieldy breadth or length, resulting probably in a waste of time and temper. Respecting size, much depends upon the texture of the turf; but 15 inches by 30 inches may be generally regarded as convenient for handling.

In all cases I have dealt with in the use of turf, it has been taken from some part of the demesne, a breadth of the most suitable being previously prepared by mowing, sweeping, and rolling; the despoiled place being sown as early as possible with grass seeds. This was, in fact, the condition at one place under which we were allowed to rob the pasture, and where the soil was found to be in good heart, a little hand tillage and sowing down with a clean quality of grass seeds enabled us to take a second or even a third crop of turf off the one spot, according to subsequent requirements. In the matter of turf *v.* seeds, if the former is of fine quality, there appears not much to choose between the two methods. I must confess to a predilection for the former, for a lawn thus made has apparently more variety, and, consequently, more character in it, and the finest types of grass seed mixtures never appear to be quite mixed enough in the way of variety to prevent a kind of sameness. But few may agree with me upon that point; one advantage with turf, however, will probably be admitted, always provided that it is of good quality—viz., that the grasses present are the survival of the fittest to the locality; whilst with seeds, some varieties may be present and in considerable bulk, not so well suited to the local conditions. With seeds, some study of the subject is necessary to obtain the best results. Several of our eminent seedsmen have so comprehensively and exhaustively gone into this matter, that the highest possible has been attained in this direction, and with a lucid explanation as regards soil, position, and substrata, their practical advice can be seldom equalled and never excelled.

In the matter of seed-sowing quick germination and unchecked growth are the desiderata, hence nothing is gained, and much may be lost, if sowing takes place prior to a spell of genial weather being reasonably expected. The middle of April in most situations will be early enough, when given a calm day, a dry surface, even distribution of the seeds, with a thorough rough raking over to cover them as much as possible, and one final rolling as a finish, under favourable growing conditions the lawn will quickly appear in its incipient stage. A single horse iron roller worked by four men, two at the shafts and two pushing, occasionally used afterwards is able by its greater breadth and weight to accomplish more and better work than several applications of the hand roller. In rolling the operation should be alternate, where the fall is not too great to prevent uphill work—thus rolling in the length one time, the next crossways—transversely. With seeds it is important that mowing should not occur before the delicate plants have time to develop a certain amount of character and robustness, any attempt to bring the lawn into a perfectly kept appearance too hastily being more or less detrimental to its future prospects. With the employment of turf this does not obtain therefore for tennis grounds which are required for almost immediate use the turfing method is preferable.

Compared with making new lawns the task of renovating old ones is simple, although no sparing of labour should entail to prevent its being efficient. A mistake not infrequently met with is that of making up certain sinkages which have taken place from time to time by the removal of trees, turfing over flower beds, alteration of walks, or other causes. The filling of these hollows with fresh soil tends to a spotty appearance by the more vigorous growth, which will, possibly, continue to be noticeable for years; and, generally, this patchwork performance is not commendable, especially in regard to the simplicity of lifting and relaying the turf, which according to circumstances may be done in sections spread over two or more seasons. By the simple action of lifting the turf all the coarser weeds disappear, and the

aëration of the soil by digging and pulverising brings new life to the grasses, with death to the moss owing its existence chiefly to an impervious bed upon which the turf rests. Assuming that no alteration of the existing level is necessary beyond making good those defects previously noticed, operations may commence by stripping a breadth of say 10 feet, and removing the whole of the turves taken from it completely off the ground and in proximity to where the work will be concluded, to be there unrolled to prevent bleaching if the work is likely to take some considerable time. This arrangement gives a fair field for operations, and the work will proceed smoothly and satisfactorily from start to finish.

Having a breadth of 10 feet cleared space running transversely from side to side of the plot, this should be prepared by forking over to a uniform depth, picking out all weed roots, and thoroughly pulverising the soil, bring all to a firm, smooth surface level. The application of a given quantity, by measure or weight, of an artificial manure to each section as the work proceeds, and well incorporating it with the surface soil, is worthy of consideration as a tonic apart from any after measures of top-dressing. Bonemeal is sometimes used, but after various trials my experience does not commend its use either as a top-dressing or sub-dressing for lawns, and farmyard manure is a thing to be avoided for our purpose. For the sub-dressing from 2 to 3 ozs. per square yard of a prepared guano, several kinds of which are in use for farm purposes, with the same quantity of superphosphate of lime applied to the lawn surface when turfed, will, although it is apparently buttering the bread on both sides, prove to be as practically inexpensive as it will be found to be satisfactory and efficient. To resume the operation of turf lifting and relaying, the turf lifted from No. 2 section will be at once laid as it is removed on to No. 1 section already prepared, the principle of the operation being similar to that of trenching a piece of ground, the first removed being held in reserve for the final process.—SYLVA.

(To be continued.)

"BLACKS" IN POTATOES.

THE condition of the "noble tuber" is often very unsatisfactory when placed on the table. The cooked article may be apparently all right to look at outside, but when dissected for cutting is found to contain dark stains, agglomerations of adhesive matter—hard, unsightly, and of a bad tasting nature. In some cases a dark, flesh-like substance surrounds a core extending inwards from the skin to various depths, and this has a very unpalatable, earthy flavour. The defects are present whether the Potatoes are baked or roasted, steamed or boiled, pared or unpared, so we may conclude that the fault is not in the cooking, but is either induced by procedure in cultivation or storing, for the "blacks" are almost, if not quite, confined to the late varieties. I have known such defects more than half a century, and, in my opinion, there has been no improvement, unless in shapeliness without quality, in Potatoes since the advent of the disease in 1844, when, as now, there were two forms of blacks—namely:

1, "Skin or cylinder-black." This commences at the skin of the Potato, and may be compared to a quill-like body that has grown around the tuber and then entered it at right angles. This outer ring of dark flesh has a very unpleasant flavour when cooked, and besides being discoloured is waxy in texture. I have examined many such tubers in the raw state under the impression that the evil was caused by the larvæ of insects, but have not been able to detect any animal in the affected parts. The early varieties appear free from the discolouration, at least the earliest lifted, and it appears to a small extent only in the second early sorts, but the defect becomes very decisive in the late varieties, especially those of the Magnum Bonum type.

The stains always extend straight into the tuber at right angles to the skin, and the substance about the quill-like centres mostly egg-shaped, smallest end outwards, chiefly exist at the heel end of the tuber. The individual "cylinder-black" accords with a miniature stab or puncture, around which the flesh has healed, internally forming a sort of skin corresponding to the wound, the dark waxy core thus formed seldom exceeding one-eighth inch in diameter, and rarely passing into the tuber more than an inch.

On appealing to several veteran growers, suggesting some kind of grub or worm as the destroying agent, the verdict has invariably been decisively in the negative. However, I am not so certain about that, for the presence of scorpion flies (*Panorpidæ*), and observing that the Potatoes were always the worst affected when grown in the hollows of a field, or badly drained soil and indifferently tilled land, rather tended to confirm the view of the injury being caused by some pest from without. It seems strange that the producing agent, if of an animal nature—and it certainly is not vegetable—cannot be detected, but this may be my misfortune in not hitting the right time for catching the enemy. If any correspondent can throw light on this (to me) mysterious infection by sending to the Editor tubers con-

taining any creature suspected of giving rise to evil, I shall be very much obliged.

I have striven to connect the infection with the thread from an "eye," which has gone blind at a very early stage, the thread dying in consequence, giving rise to the egg-like substance. The physiologist and chemist rather support this view, as there occurs the same thing at the heel string in modified degree. Every "eye" of the stem—the tuber is an underground stem—has its central axis springing from the interior of the tuber, and if we kill this by salting the tubers to make them keep late in the season and weigh well for market, we get the blacks in the flesh with a vengeance. There remains also to be considered the important point of the assimilation of the nutrient elements by the tops, and the consequent nature of the plastic material composing the underground stem or tuber, which is waxy, dark coloured, and unwholesome or mealy, white and nutritive according to the contained components and measure of their elaboration.

2. "Flesh-black." This may obtain in either the waxy or mealy Potato, pervading the tuber, and forming lumps here and there through the flesh. There is nothing in either case of an organic alien body to account for the effect. Of course the raw Potato may be diseased, and in cooking have "blacks;" but this has no relation to the present inquiry. In perfectly sound tubers which turn black when cooked there does not appear any micro-organism, but the tissue is more or less broken down in the cell-walls, especially in the soapy stamp of Potato.

Nowhere does the Potato grow so well as on the warp lands and alluvial soils, or the washings from the hills of higher land—all mixtures of many earths, largely commingled with dead animal and vegetable remains. These alluvial silts and warps, where left high and dry, or drainage is properly attended to, do not, as a rule, produce Potatoes affected by "blacks," and even fens have been so improved that they have greatly lost the property for which they were long famed in growing "black" cooking Potatoes. Moor land also produces splendid tubers.

Granting some local land improvements, still Potatoes as now grown are, taking them in the bulk, a sorry lot. The Up to Date varieties all lack the high qualities of the Ashleaf, Lapstone, and York Regents. Quality has given place to appearance in the raw, and to waxiness and "blacks" with a modicum of mealiness in the cooked article. Worse Potatoes were never known within the past fifty years than the present day varieties as grown and placed in the market. Let both raisers and growers see to this, for assuredly if the home grower will not supply an unimpeachable article the foreigner can.

"Blacks" enter the underground stems or tubers of Jerusalem Artichokes, and even the true roots as well as the tubers. What are they but a product of unsweetened soil, such as exists in the fens and low-lying lands of Great Britain and in the bogs of Ireland? High land now receives very little real tillage as compared with former times. Aëration by tillage and sweetening by the periodical use of lime, with keeping drains in order, are matters that are not, broadly speaking, pursued with the same energy as formerly. This neglect of the land is seen almost everywhere in the fields and felt in every household.

"Potatoes will not pay for growing," is the modern cry, "therefore let us cheapen the cost of production." As a result, the land is "chemically manured"—stewed with acids, muriatic and sulphuric, along with the bones of countless animals? Is it not the way to produce "blacks" in Potatoes? Why not see to the drainage of hollows, thorough aëration of the soil, and dressing with lime? Surely the land contains enough acids from the long course of cultivation without adding more, especially for this important crop. Potatoes can only be improved by withdrawing the excess acids from the soil. Let anyone try the simple process of draining wet land, tilling the soil deeply, and dressing occasionally with lime.

A farmer, who had long been in the habit of using muriate of potash and superphosphate of lime for Potatoes, went back to the procedure of half a century ago, but instead of using lime, as then, had recourse to basic slag, relying on well-made yard manure for potash, and on rape dust for nitrogen. The farm, notorious for its black and waxy Potatoes when the "acid" manures were used, became again, as in former times, as famous for its white and mealy Potatoes; and though an agent for the sale of "acid" fertilisers, he gives them a wide berth in his Potato fields.

The chemist made out an excess of sulphuric acid and chlorine in the black Potatoes, partly due to the slow decomposition of crop residues in the soil through the low percentage of lime, which was considered the only thing the land needed to set it right. This the farmer gave, also a steady supply of phosphate in the basic slag. Muriate, or rather chloride, of potash has the well-known character of causing Potatoes to produce waxy tubers, sulphate being more appropriate; but I am not at all convinced of the innocence of sulphuric acid, for even without the muriate the tubers boil "black," while with neither in the land on the same farm the Potatoes cook dry, white, and floury.—EXPERIMENTALIST.



ODONTOGLOSSUM CRISPUM PRINCESS CHRISTIAN.

No new Orchids receive a better welcome than do varieties of *Odontoglossum crispum* that are distinctly above average merit. It matters not how many there may be, the best are sure to find a host of admirers. Such was the case on Tuesday, March 22nd, when Mr. H. Ballantine, gardener to Baron Schröder, The Dell, Egham, staged at the Drill Hall Show of the Royal Horticultural Society, *Odontoglossum crispum* Princess Christian. It is one of the handsomest crispums that has been seen of late both in its excellent form and the chasteness of its colouration. A glance at the woodcut (fig. 57) will convey an idea of the form of the flower, of which the ground colour is pure white. The fimbriated petals have occasional large bright chocolate red spots, while the sepals are similarly blotched and spotted. The plant was in robust health, and carried a grand spike. A first-class certificate was awarded by the Orchid Committee.

DENDROBIUM PULCHELLUM.

I HAVE seen this pretty Dendrobe growing in a variety of ways, and, perhaps, in none is it more effective than in baskets when allowed to grow out over the sides, rooting through the rods into the compost. The habit of the plant is very dwarf, the small stem-like pseudo-bulbs lying almost prone, and seldom exceeding 4 inches or 5 inches in length, but so free flowering that when thoroughly ripened the plants appear to be just a mass of flower. These occur singly or at the most in twos from the nodes, and are a pretty rosy pink with a golden yellow centre to the lip, which is delicately fringed.

D. pulchellum, as it is known in gardens, is not a difficult species to cultivate, and may as to atmosphere and temperature be treated much the same as recommended for the deciduous group generally. But even less in the way of compost is needed; in fact if the compost is provided it cannot be utilised by the roots, and only decays and makes the other material about it close and sour. If baskets are used they should be filled to within an inch of the top rods with clean crocks; over these a layer of rough moss, and then the compost consisting equally of peat fibre, sphagnum, and finely broken crocks. In fixing the material keep the centre well up to avoid accumulation of moisture.

In planting pull the plants to pieces and reject any old or shrivelled bits, or at all events lay them on one side and make up the best first, using the worst to grow for stock purposes. If well planted in good material no further disturbance will be necessary for a few years beyond cutting away some of the older shrivelled stems, and pegging down the young ones to take their places. It may be noted here that this species breaks naturally from many of the upper nodes, and not only from the base—or principally—as in some other kinds. Each season a few more stems may be brought down, and induced to root between the rods into the drainage material or about the rods of the basket.

After basketing, the plants may be returned to the growing quarters, and this should be a hot and very moist house, the baskets containing the plants being suspended in a good clear light. Water should be plentifully provided both at the roots and in the atmosphere, and a light dewing with water from the syringe is very refreshing and helpful on bright sunny days at closing time. It produces, in fact, the brisk, buoyant atmosphere that all Dendrobies delight in during the growing season, and owing to the mist settling on the inside of the glass the full force of the sun's rays is broken, yet its stimulating and quickening effect is unchanged.

There are various other ways of growing this pretty Dendrobium, some cultivators preferring large cork blocks for it lightly dressed with sphagnum moss. In this way the plants do well if properly attended to as to moisture, while they may also be grown in pots or pans in the usual way. On Tree Fern stems, too, the plants have a pretty and natural effect, and the roughness peculiar to these suits the

roots admirably. Bare block treatment is not good enough for it, the stems not swelling up to their proper capacity, or producing a proper complement of flowers.

Growth is rapid under the conditions indicated, and by about August the young pseudo-bulbs are fully developed as to size. When quite finished and the terminal leaves formed, hang the plants in the Cattleya house, and gradually reduce the supply of water to the roots. After a few weeks the foliage will begin to lose colour and fall, when remove the plants to a still cooler but light position, such as the front stage of a vinery, where the fruit is hanging, in an ordinary greenhouse. After this, little or no water will be needed during the winter, and the plants will be quite safe in a house that does not fall below 45°. As long as the bulbs do not shrivel, they will take no harm; in fact, in very cold, dull weather, they may hang for weeks without any water at all.

Insects are fond of this plant, especially of the young growing shoots; thrips and red spider often putting in appearance. Fumigation and repeated spongings are necessary to remove these, and must be persisted in until all the insects are killed. As noted above,

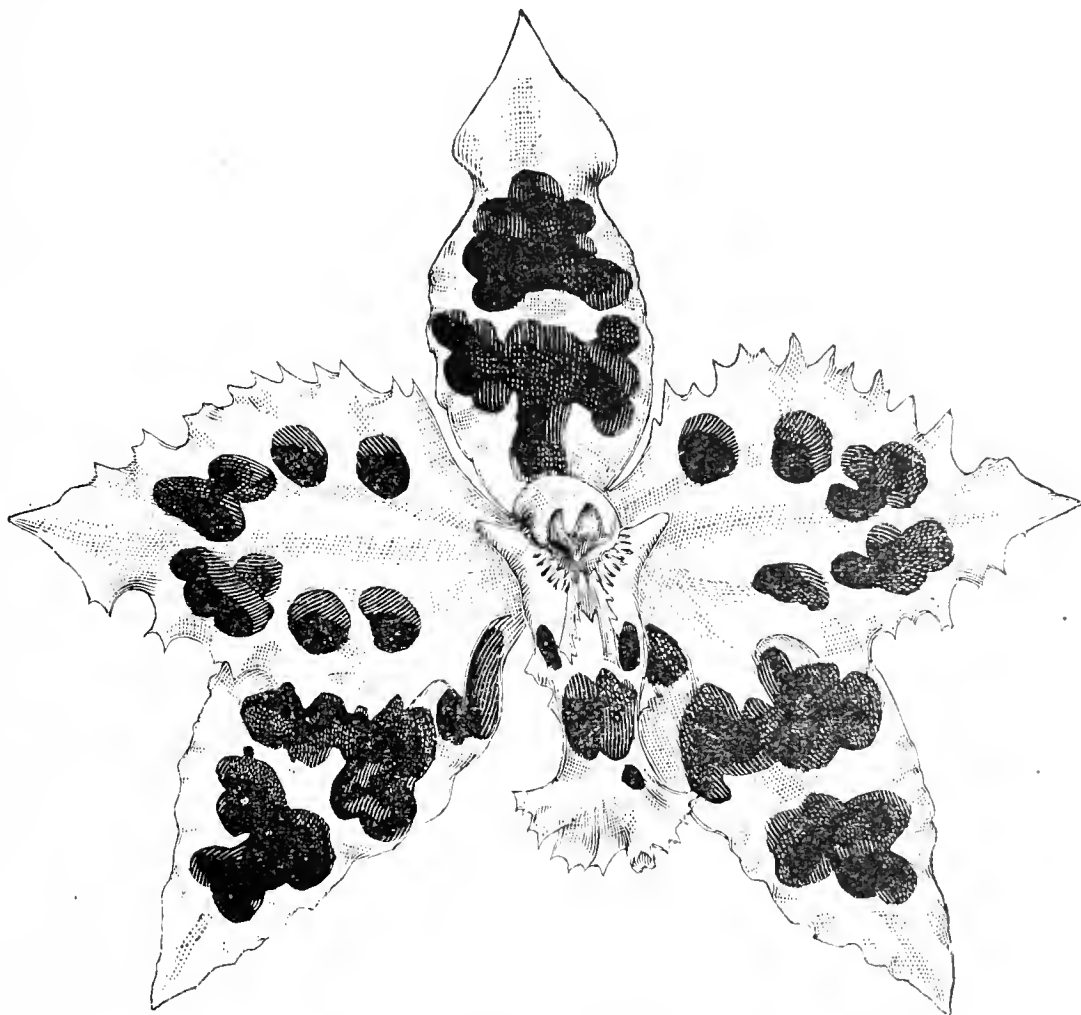


FIG. 57.—ODONTOGLOSSUM CRISPUM PRINCESS CHRISTIAN.

D. pulchellum is the name under which this plant is best known in gardens, but as a matter of fact *D. pulchellum* is an unknown plant in this country. Many years ago a species was discovered in India, and named *D. pulchellum*, but probably it was never introduced to cultivation. This was about 1830, and a year or two after Messrs. Loddiges, then a flourishing and important nursery firm, introduced the present plant, and figured it under this name.

Since then many botanists have found fault with the name, and some ten or more years ago the plant was figured and described as *D. Loddigesi*; but so firm a hold has the old name taken, that it is still, and probably always will be, known as *D. pulchellum*. It is a native of the Island of Hainan, and probably also the mainland of China; but it does not seem to have been found in India. It has not, I think, been very frequently imported, though doubtless this is more from design than from any scarcity in its habitat.—H. R. R.

MUSCARI BOTRYOIDES ALBUM MAJOR.—It does not appear to be generally known that there are two varieties of the pretty white forms of the common Grape Hyacinth, *Muscari botryoides*. The major form is much to be preferred to the smaller one. The latter has short racemes, with small closely set flowers; the former has a raceme of considerably greater length, and larger individual flowers. It is a very desirable variety, and should be secured by growers of early bulbous flowers.—A. HARDIMAN.

CULTURE OF MARGUERITES.

FEW easily grown flowers have enjoyed such a pronounced popularity as the white Marguerite. A few years ago there was no lack of prophets who predicted that they would rapidly decline in public favour. Instead of such being the case, I am bold enough to assert that Marguerites were never more largely grown than they are at the present time. The truth about the matter seems to be that plants which may be so managed as to produce white flowers at any season of the year are not yet numerous enough to enable us to dispense with such comparatively common flowers as white Marguerites. They possess, moreover, a type of beauty which ordinary individuals do not easily become tired of, and are also extremely serviceable in supplying both cut flowers and pot plants.

For many years I have made a practice of inserting a number of cuttings in September. These are transferred to small pots some time during October, and kept in cold pits unless very severe frosts are experienced. By covering the glass with a double thickness of mats such plants are quite safe when not more than 12° of frost occur. During the last two winters I have kept a good stock in frames without having lost a plant. I arrange them thinly, and thus secure very sturdy growth. Some time during March I place the whole stock in their flowering pots, the stronger plants being transferred to pots 6 inches in diameter, and the weaker ones into 5-inch pots. Two parts loam or good garden soil to one of well-decayed manure (or that from a spent Mushroom bed), with a little sand and soot added, is the standard mixture. The soil is pressed into the pots very firmly, and after being kept somewhat close in a cold pit or frame for a few days, abundance of air is given on all favourable occasions.

A week after the operation of potting has been performed the points are removed from each shoot, and as growth advances the plants are being continually given more space, to cause them to maintain their sturdy habit of growth. This continual thinning out is of the utmost importance in the production of good plants, and although it is sometimes difficult to perform it just at the right time through want of space, the exercise of a little ingenuity will usually help one out of the difficulty. I have frequently placed some in a sheltered position in the open air and protected them with canvas rather than spoil the whole batch by overcrowding.

As soon as the roots have permeated the new soil I like to commence feeding, as this, like all other species of *Chrysanthemum*, is a gross feeder. Soot water applied two or three times weekly is an excellent stimulant to begin with. After a few weeks of this treatment one of the many good fertilisers now in the market should be applied as a top-dressing once a fortnight, and liquid manure from the drainings of stables or cow sheds, diluted with ten times its bulk of water, be given three times weekly. During bright weather in April and May I like to remove the lights from the pits or frames so as to leave the plants fully exposed during the greater part of the day.

Many cultivators do not seem to recognise the great value of syringing the plants, but I make a practice of doing so each afternoon if the weather is bright, and I am convinced that it helps greatly in maintaining healthy and vigorous growth, and also in warding off the attacks of leaf miners, caused by the deposition of eggs by the fly. At one time I used to dread the attacks of this destructive pest, but by resorting to remedial measures at an early stage I am now always able to successfully combat it. The plan I adopt is this: As soon as I notice a single maggot in any leaf I dissolve 2 ozs. of soft soap in a gallon of water, and add to it half a wineglass of petroleum, mix this thoroughly, and syringe upon the plants. This will destroy all eggs it touches, and will also make the leaves distasteful to the fly. Starved plants, which are grown in a dry atmosphere and receive insufficient quantities of water, quickly fall a prey to this destructive pest, and I have no hesitation in saying that during the month of May I could cause a weakly plant to become badly infested with maggot solely by negligence or bad culture.—PLANTSMAN.

CALCEOLARIAS FOR BEDDING.

THE usefulness of these plants for the embellishment of the flower garden during the summer months cannot be disputed, yet they have of late years fallen into somewhat bad repute. This, doubtless, is largely owing to many of the plants dying suddenly in the beds when they should be at their best, which necessitates planting a large number in the reserve garden for the purpose of filling up. A discussion on the causes of this failure, and the means of preventing it, would be of great value to many readers of the *Journal of Horticulture*, for the Calceolarias stand almost alone for distinctness of character and profusion of flowering until late in the summer.

One cause of failure may, I think, be attributed to coddling the young plants in the winter whilst under glass. Then, again, notwithstanding the fact that the plants will root more freely in a cool soil, the time for planting in the beds is often deferred till the end of May. By this time

the soil has become warm from the action of the sun, and is therefore prejudicial to the plants starting root action at once.

The second week in March, if the weather be favourable, or at the latest the end of the month, the plants should be lifted carefully, and replanted in a bed of moderately rich soil in rows 6 inches apart, the same distance being allowed in the rows. The beds can be made up in any old frame, or even a turf pit in the open, provided they can be sheltered from severe frosts and keen winds, which often prevail during March and April. Throughout this time no more covering should be accorded than is absolutely necessary. Early in May the position in the beds which they are to occupy should be decided, and after giving them a good dressing of rich cool farmyard manure (cow manure for preference) or trench and digging this in, the plants may be carefully lifted and replanted with as little delay as possible, and be well watered in should dry weather prevail. They should receive copious supplies of water, the early morning and the evening being the best time for supplying it. By following the lines here laid down we lose only a very small percentage of plants. Our soil is of a very light open nature, and I incline to the belief that a retentive soil suits the Calceolaria much better.—CALCEOLUS.

NOTES ON CURRENT TOPICS.

AZALEAS.

THE painstaking article on page 232 of your Journal has all my sympathy, and so have these beautiful useful flowers. They are sadly neglected, and thus improved varieties, although abundantly existing, have been rarely seen during the last ten years, and were little heeded five or ten years before that. The varieties then introduced have hardly become generally known in the declining taste for these flowers, and yet they are a distinct advance, and to a considerable extent on such older varieties enumerated by your contributor, who only names Deutsche Perle of the newer ones. Within my recollection Sigismund Rucker and John Gould Veitch presented a new departure some thirty years ago as being the first instances of flowers of good substance, with a bold white border with salmon and lilac centres.

Since then brighter tints with a white border have been added. The very brightest of them all, *Souvenir de Prince Napoleon*, rich cherry-red with a clear white border, is seldom seen, although supplied at the time by Messrs. Veitch. Varieties like *Madame de Grevé*, *Madame de Kerchove-Lippens*, as well as *Fanny Boyé*, are very distinct in another way, having a smaller but more intense yet substantial blotch heavily bordered with white and most attractive. I think *Madame Louise de Kerchove* of very great merit, as well as the rather paler *Princess Louise*, both bordered with white. Among dark selfs are *Argus*, *Louis Lubbers*, and the newer variety of immense size, *Memoire de L. Van Houtte*, quite a first-class variety. A great contrast to the latter is *Comte Charles de Kerchove de Denterghem*, with a remarkably rich variety of tints. Lastly, but not least, among coloured varieties is *Madame L. Van Houtte*, a highly superior variety, very large, tender carmine margined with white. It lasted five to six weeks in flower, and no collection should be without it. Of white varieties *Madame Marie Planchon* is excellent, semi-double, with undulated edge. *Baronne de Vriere* is very large. Many more might be named.

The mention made of these plants deserving a house to themselves is well justified; but a combination with other classes succeeding well under similar treatment would probably suit amateurs better. I will refer to them on a future occasion. Meanwhile, I cannot help thinking that the claims of such old favourites, with the supplement of newest varieties, should induce growers to show them at the Drill Hall during the next month or two, where many might see the best of them for the first time, and certainly the younger generation would. If Camellias are worth showing as they are, surely Azaleas have a claim. Even our Continental originators of these lovely plants might be called upon to show what advance has been made; and as their appearance at the Drill Hall is by no means unheard of, the present flowering season of Azaleas seems to furnish an appropriate opportunity.

LANE'S PRINCE ALBERT APPLE.

In some horticultural journals this Apple is referred to at this season as excellent either "for dessert or cooking." A test would dispel the idea. It seems surprising that it should be described as suitable for dessert. Certainly, if dished to be looked at only, as at the Drill Hall meeting recently, it may be suitable for dessert as "a thing of beauty," but as to flavour it is in tartness hardly beaten by Dumelow's Seedling "at this season."

In penning such statements as to the quality of dessert Apples writers must not overlook the fact that they may disappoint numerous readers, who would find out their mistake only after growing trees a few years. A similar and frequent mistake is made with regard to the early variety *Duchess of Oldenburg*, when recommended as an eating or dessert variety, whereas it is a suitable complement in the trio of sorts named by me which are as sour as a lemon, figuratively speaking, and only useful for cooking purposes.

I should describe as an early eating Apple the *Yellow Transparent* (syn. *Grand Sultan*), which is indeed surprisingly sweet when fully ripe and eaten from the tree in July and August. It is a pity *Beauty of Bath*, *Duchess of Gloucester*, and *James Grieve* cannot be classed with the last named. They are described usually as dessert Apples, to which their tartness does not entitle them, however bewitching their looks, which is the only claim they can advance.—H. H. R., *Forest Hill*.



WEATHER IN LONDON.—On Thursday last, and throughout almost the whole of Friday, a heavy gale passed over the metropolis, bringing with it considerable quantities of snow and rain. The wind during those two days and on Saturday morning was bitterly cold, and pedestrians had much discomfort to put up with. About midday on Saturday it turned rather milder, and rain commenced falling, continuing almost without intermission until Sunday night.

— **WEATHER IN THE NORTH.**—During the last seven days a bitterly cold wind from the N.E. has continued, and a good deal of snow has fallen, both in the northern and the south-eastern counties. Throughout there has been little sunshine. On the mornings of the 25th and the 26th there were between 3° and 4° of frost. Monday brought sleety showers in the morning; the afternoon was dull but fair. Snow fell intermittently on Tuesday morning, but it melted rapidly on the lower grounds.—B. D., *S. Perthshire*.

— **GARDENING APPOINTMENTS.**—Mr. George Ellwood, for the past three years foreman at Lockinge Park, Wantage, Berks, has been appointed head gardener at Enbridge Lodge, Newbury, Berks. Mr. G. Kent, who has resigned his position as head gardener to the Earl of Yarborough, Brocklesby Park, Lincolnshire, has been appointed head gardener to Lord Mount-Stephen, Brockett Hall, Hatfield, Herts, and enters upon his duties this week. Mr. James Wyatt, for many years head gardener to J. Perry, Esq., Bradenhurst, Caterham Valley, has been appointed in the same capacity to W. Oppenheimer, Esq., Riversdale, Thames Ditton.

— **PRIMROSES AND HEPATICAS.**—When “E.” refers to double Primroses as not being readily propagated from seed, does he mean hardy ones or Chinese Primroses? So far as these latter are concerned it is known that the named doubles do not seed at all; but the semi-doubles do fairly well when artificially fertilised. But I know of no corresponding strain of hardy semi-doubles that seed. All double hardy Primroses are quite devoid of fertile organs, these having in the doubling process been converted into petals. How seldom do we see these Primroses in gardens southwards or round London? The hardiest are the white, lilac, and sulphur; but good clumps of them are rarely seen in gardens now. Like Hepaticas, they suffer much from dry, hot seasons, or from cold, wet winters. Both dislike a hot, arid atmosphere, and a soil that becomes waterlogged in the winter. Both like a deep sandy loam in which is an admixture of peat, with a gently sloping border somewhat shaded, where the foliage keeps vigorous and green during the summer.—A. D.

— **SPRING FLOWERS.**—After a winter of Arctic severity, and when for many weeks the earth is held in the iron grip of frost, early spring flowers come as something new and fresh to remind us that the hard time is over. The first Primrose and the first Violet carry with them a charm peculiarly their own, and envied indeed is the happy youngster who scours the hedgerows and gathers the first bunch. This season the interest in these harbingers has been small, as we have had them with us more or less all the winter. We seem hardly to have been without outdoor flowers on account of the extreme mildness of the winter. Long after we might have expected frost and snow the autumn flowers were blooming brightly—the Chrysanthemums, Roses, Dahlias, Asters, and all the rest of them; and hardly were these over when what are usually called harbingers of the spring began to make known their presence. Violets have bloomed outdoors in my garden nearly all the winter, and early in January Primroses were flowering freely. The Snowdrop was not to be cajoled by appearances, and did not come much earlier than usual, though its reign was shorter than in previous seasons. Not only in gardens, but in the woodlands has it been so, and with the new year came the early spring flowers. On this account the first Primrose and Violet have not carried with them their usual interest, as it is difficult to say when the first came. The early beginning seems like being continued, as fruit trees are showing abundant blossom, and everyone is pushing forward with work in the garden. All will be well if Jack Frost kindly hold aloof.—G. [“Jack” has not obliged our correspondent, who penned his note some time before he had to dig his way through the snow; he says he will not be tempted to prophesy again—at least in March.]

— **THE ROYAL GARDENERS’ ORPHAN FUND.**—We are reminded that the annual festival dinner of this most deserving charity will take place on Wednesday, April 20th, at the Hotel Métropole, under the presidency of C. E. Keyser, Esq., of Aldermaston Court, Reading, and late of Stanmore. Mr. Keyser is so well known as a patron of horticulture that we hope there will be a large number of gardeners present to give Mr. Keyser a cordial reception.

— **NATIONAL VIOLA SOCIETY.**—The annual exhibition of this Society is to take place on July 2nd at the Crystal Palace on the same day that the National Rose Society will be holding its Metropolitan Show. In the schedule now before us a score of classes are particularised, amongst which may be observed those for small as well as large growers of Pansies and Violas. The Hon. Secretary of the Society is Mr. R. T. Dougall, 52, Pembroke Road, Walthamstow, from whom schedules of the show may be had, and also full particulars as to membership of the Society.

— **HESSLE GARDENERS’ SOCIETY.**—A meeting of the above Society was held on Tuesday, March 22nd, Mr. Geo. Picker in the chair. The essayist for the evening was Mr. J. Lambert, and the subject “Hardy Fruits.” The essayist dealt with his subject in a masterly manner, giving the cultivation of the different kinds of fruits. He also gave the most suitable varieties for market. A good discussion followed, and several questions were asked, all of them being answered in a satisfactory manner. Mr. J. T. Barker showed plants of *Cypripedium caudatum*, *C. villosum*, *C. v. giganteum*, and some *Dendrobium n. nobilis*. Mr. J. P. Leadbetter, Tranby Croft Gardens, showed Carnations and Violets in variety. A vote of thanks to the essayist terminated the meeting.—G. W. G.

— **COOKING POTATOES.**—The proof of the pudding or the Potato is in the eating, and there are some varieties of pleasing appearance which are well known as prizewinners at shows, that in quality are very much inferior to others less attractive in appearance. In the case of Potatoes judging must to a great extent be done by appearances, and therefore the good-looking Potato stands the best chance of winning a prize. There is also something to be said about the cooking itself, as tubers in the hands of one cook will invariably present a different appearance than when boiled by another. At many shows prizes are offered for the best dish of cooked Potatoes, and this class might be encouraged still further. In the first place it is the quality, not the appearance of the Potato that is brought into question, as they are judged by flavour; and secondly, it is an encouragement to housewives to mark the difference between well and badly cooked Potatoes. Anything that can be done to encourage the growth of the best eating varieties of Potatoes is a right step. A Potato to thousands is but a Potato, and varieties are a myth, yet they are not slow in knowing which are the good cooks, and these they are anxious to purchase. The varieties of Potatoes now in cultivation are so numerous that something in the direction of classification might be done for the benefit of growers, and in the event of this, the point of cooking qualities should be clearly set forth.—G.

— **THE NEEDED RAIN.**—It is usually esteemed bad form to look a gift horse in the mouth, but badly as we needed rain, we could have wished that what has recently fallen had come in a warmer and more acceptable condition than it did. Certainly the ground had, because of such an unusually dry winter, become very dry, and in many places it has moved on the surface like dust. But much worse have been the grave complaints heard in many directions of the shortness of the water supply, wells and other water sources having already given out. No wonder if in such case those dependant upon uncertain supplies of water have felt anxious as to their position later should the comparative absence of rain continue. Even as it is we have not had very much, for snow, even if the fall be heavy, yet gives but a very small body of water relatively, and the snowfall generally has been light. That surface soil has been moistened to the depth of a few inches is something, but it has left that soil extremely cold, and many who have sown small or half-tender seeds have had cause to wish they had exercised rather more patience. Such weather as we have recently experienced, accompanied by such low temperature, could hardly be otherwise than harmful in its effect on seeds of many descriptions, especially those just bursting into growth. In spite of the beautiful weather we have from time to time experienced since the opening of year, yet there has been ample evidence that summer is not yet for us, and a cold ordeal has inevitably to be passed through. We now badly need sun heat to warm the cold saturated surface soil, and then also to open and fertilise the fruit blossom. But beyond that we need April showers, warm and abundant, to enable us to face the coming summer heat, which we shall doubtless experience in due course.—A. D.

— **SHIRLEY GARDENERS' ASSOCIATION.**—The annual general meeting was held at the Parish Room, Shirley, Southampton, on Monday, the 21st inst., the President, Mr. W. F. G. Spranger, presiding over an average attendance of members. The report showed that twelve meetings had been held during the past year, 516 members attending, giving an average of forty-three. The attendance, it was felt, should average more with a membership of about 140. The accounts showed a balance of £3 odd in favour of the Association, and there is still a number of subscriptions unpaid. The President, Vice-Presidents, Treasurer, and Secretary were re-elected. Votes of thanks were accorded to the President and also to the horticultural and local Press. Some of the members and their friends afterwards gave a vocal and instrumental entertainment, which was much appreciated.

— **GROWING VIOLETS.**—The method of propagation recommended by Mr. G. Hart, on page 236, has doubtless been proved by him to be a good one, as he prefers it to raising fresh plants from cuttings. I gather from his remarks, however, that it is necessary to allow the old plants to remain in the frames till the middle of April before they are lifted, and here arises a difficulty. Where frame room can be spared for this purpose all is well, but my experience of growing Violets is that the urgent need of the frames for the raising of early vegetables, annuals, and so forth does away with any possibility of leaving the Violets in them till the middle of April. Frequently the plants have to be lifted from the frames on this account early in March, and finish their blooming under the protection of a wall. It appears to be a matter of circumstances whether your correspondent's method is preferable to propagation by cuttings or divisions.—V. T.

— **THIBAUDIA MACRANTHA.**—Although there is a large and varied collection of plants in the conservatories at the Birmingham Botanical Gardens, none that I saw there interested me so much as the hardwooded plant from the Himalayas above named. It is so rare that it is known to very few gardeners. The plant at Edgbaston, now in a 10-inch pot, is of bush form, and has thin or meagre leafage. Its habit is loose, and by no means of dense growth. Out of bloom it would bear an insignificant appearance, but in bloom, as I saw it the other day, it was singularly pleasing. The flowers are produced singly and in clusters from the old leafless wood. They are mitre shaped, having fine segments at the mouth and ribs on the tube. They are about $1\frac{1}{2}$ inch in length, are pendant, and reddish-white in colour or veined. Altogether when in bloom the plant is a charming one. It requires conservatory temperature, and may be propagated by inserting tops of half-ripe shoots in sand under a bell-glass in good heat.—A. D.

— **THE MILD WINTER AND A STRANGE INSECT AT TORQUAY.**—Mr. Alfred Chandler, F.R.Met.Soc., the Meteorological Observer for the borough of Torquay, sends us the following from the "Western Morning News":—Amongst horticulturists in South Devon curiosity has been excited in the appearance of an insect supposed to be new to the present generation of horticulturists, and the product of the past abnormally warm winter—the mildest, perhaps, for the last twenty-five or thirty years. It should be stated that the infestation was discovered on a Cedrus Deodara tree in the garden of Mr. Dundee Hooper, Ardvary, Torquay. There was some difficulty at the first in finding an insecticide which would effectively destroy these insects. A few degrees of frost or a cold wind seems, however, to destroy them immediately. In connection with the excessively mild winter now just passed, we have had here in Torquay, which I see has also occurred in other parts of Devon, the Blackberry (*Rubus vulgaris*) in bloom in January, and setting for fruit in February. The high mean temperature during October and November of 1897, and December, January, and February last, was quite phenomenal. The mean temperature of the five months was 48.2° , or 14.8° of accumulated heat above the average of twenty-two years' observations at Torquay. Specimens of the insects were sent to Miss Eleanor A. Ormerod, who said they belonged to the genus *Lachnus*, known as the Pine aphid, possibly *Lachnus pinicola*, an English species, only more than usually noticeable, consequent on the mild season. For preventive measures kerosine emulsion was pronounced the best of all. Specimens were also forwarded to the Board of Agriculture, and Mr. Charles Whitehead wrote:—"It is undoubtedly *Lachnus pini* from which your Deodars are suffering. It is unusual to find these aphides so active at this time of the year, but it is due to the mild abnormal season." W. F. H. Blandford, of the Entomological Society of London, wrote to Mr. Dundee Hooper:—"It is certainly an aphid, and has nothing whatever to do with the American blight, usually so called, of Apple trees, or with the San José scale, which has lately created a scare in Germany, and appears to be in a fair way to do so in this country."

— **BIRMINGHAM GARDENERS' ASSOCIATION.**—At a recent meeting of this Society, Mr. W. B. Latham presiding, a very interesting and comprehensive paper, illustrated with coloured plates, on the genus *Iris*, was read by Mr. James Deans. The essayist's familiarity with the cultivation and study of the *Iris* specially qualified him to deal with the subject in an entertaining and instructive manner. A hearty vote of thanks was unanimously passed to the essayist.

— **DODECATHEON HENDERSONI.**—A pretty "American Cow-slip," or "Shooting Star," bearing the above name, has been introduced from California within the last few years. It occurs in the Ukiah Valley, as I gather from a note in a contemporary. It is a charming little plant, with crimson or rose-purple flowers, with a yellow ring at the base. Like the other Shooting Stars, the petals are reflexed like those of the Cyclamen, and this adds much to the interest of the plant in the eyes of many. It is dwarfer than several of the genus, and here has only grown about 6 inches high.—S. ARNOTT.

— **MUSHROOMS IN RAILWAY TUNNELS.**—It may not be generally known that the cultivation of Mushrooms is carried out most successfully in a disused railway tunnel at Edinburgh, known as the Waterloo Tunnel. In the course of a discussion on the proposed new Brixton and City Electric Railway, with stations at Brixton Hill, Lorn Road, Kennington Oval, Kennington Cross, Lambeth, St. George's Circus, and London Bridge, the construction of which was sanctioned recently by a Committee of the House of Commons, it was stated incidentally by Mr. Littler, Q.C., that although there might be Mushroom companies springing up on all sides, it was hardly the business of a railway company to engage in the cultivation of the succulent fungus. At the same time the City and South London Company, who will work the new Brixton line, are open to offers for the use of their disused tunnel at London Bridge for that purpose, as the new tunnel under the Thames which is now in course of construction will be utilised for the conveyance of their passenger and other traffic to Merrie Islington.

— **LEAF VARIATION.**—The varying forms of leaves on the same plant always attract the attention of the curious. On the Mulberry and others some leaves will be quite entire; others are deeply lobed. In none of our text-books does there seem to be any explanation of this. From what we read in elementary works one might almost believe that the tree first formed the nerves of the leaves, as if a sort of skeleton frame, and then spread the green matter of the leaves over it. But it would seem that these veins are to support the leaf—that is to say, to give strength to it. If this be granted, the leaves will not make veins or ribs when it has no green blade that needs this strengthening. When, therefore, there is a low degree of vital energy, and not much leaf-blade material formed, there would be no need of these supporting ribs. May we not, therefore, say that it is from some local weakness in not producing material to warrant the production of leaf-blade that accounts for the absence of the ribs, and which then results necessarily in a lobe, where otherwise the leaf would be entire?—LESTER BERNSTEIN (in "Meehan's Monthly").

— **VASES OR CUPS FOR CUT FLOWERS.**—When inspecting the collections of cut Narcissi at the recent show held at the Botanical Gardens, Edgbaston, my attention was drawn to what appeared to be a very suitable kind of vessel for the arrangement of such flowers as Daffodils. It is an invention by the Rev. J. Jacob, Whitchurch, whose collection of these flowers was arranged in them, and evidently they proved most suitable for the purpose indicated. The vessel is cylindrical, made of tin, about 4 inches in depth, and less in diameter. Some were painted green, and the remainder a chocolate brown—the latter, however, being the more appropriate in contrast with the green foliage of the flowers. At about half an inch from the bottom of the interior of the vessel is soldered a wire ring to form the base for a holder, and which consists to two disks of tin perforated with at least a dozen holes for the reception of the stalks of the flowers and foliage, each hole being no larger than for allowing the ready insertion of the flower stems—the insertion being specially suitable for the purpose, or indeed for any other kind of flower with no larger stems. The two disks are attached to the ends of a hollow tubular standard, also composed of tin, and of sufficient length to reach from the top of the inside of the vase to the ring below, thus affording a ready means of inserting the flower stems through the pair of disks, and holding them in the required position. As the standard or holdfast is moveable and fits easily inside the vase, either end of the former can be used, top or bottom. A small portion of dried moss was placed amongst the stems of the flowers and foliage to hide the inside of the vase. Altogether the arrangement seemed to be perfect, and Mr. Jacob intends to have it patented.—W. G.

— **BEEES AND HEPATICAS.**—Your note to my observation regarding *Hepatica angulosa* major leads me to say that I have not observed bees frequenting the Hepaticas. At this season their attention is greatly given to the Scillas, Chionodoxas, Crocuses and Daffodils, with the white Arabis and purple Aubrietias.—A. HARDIMAN.

— **JERSEY GARDENERS.**—The tone of the annual report of the Society of Jersey Gardeners is most pleasing. The three shows that were held in 1897 were very successful, while the list of members increased materially. The balance-sheet shows a satisfactory condition of affairs. Three shows were arranged for this year, one of which was held on the 24th inst. The summer exhibition will be held on July 27th and 28th, the Chrysanthemum one on November 9th and 10th. The Hon. Secretary is Mr. J. M. Gibbs, Spring Bank, Valley des Vaux, Jersey.

— **SWEET PEAS.**—A row, whether long or short, of Sweet Peas is desirable in most gardens. Failing rows, several patches in a flower border will provide excellent material for cutting. Sweet Peas remain in a flowering condition for a long period providing they have good soil to grow in and have copious supplies of water at the roots in dry weather. A further aid to continued flowering is to pick off all the seed pods as soon as seen if the flowers are not closely cut. Named varieties in special colours are numerous, but a sowing of mixed varieties is serviceable for general purposes.—S.

— **MINT.**—In response to "H. S.'s" inquiry (page 239), respecting the manuring of Mint, I would remark that I experienced a similar result some two years ago. I applied a thick coating of manure, composed chiefly of vegetable refuse mixed with coal ashes in a fairly decayed condition, when, to my surprise, in the following summer the whole of the long established bed was destroyed, excepting round the edge where the manure was very thinly spread or not applied. I had never known or heard of a similar occurrence before, and I thought it possible that the dressing was not sufficiently decomposed.—W. G., *Birmingham*.

— **EARLY CAULIFLOWERS.**—Early Cauliflowers are much prized, hence most kitchen gardeners make an early sowing in pans or boxes under glass in February or early March, following with another sowing about the present time. The young seedlings, properly hardened and kept sturdy, should be pricked out in a frame on a slight hotbed, but they will do very well without bottom heat if placed in good soil with a layer of rotted manure beneath them. This assists them to make rapid growth, and provides something which the roots will tenaciously hold, which is most desirable when planting out finally. Good heads may be obtained in July from the latter sowing. Sutton's First Crop is a good variety.—E. D. S.

— **WOOD PULP FOR PAPER.**—The requirements of the paper trade, according to a paper read recently before the Society of Arts, are likely to become a great drain upon the forests of Scandinavia, the United States, and Canada. Judging, says a contemporary, from the present rate of increase, the quantity of wood required will, before long, assume enormous proportions. It was estimated a few years ago that in the United States of America alone 500,000,000 cubic feet of timber were consumed annually, representing the destruction of 100,000 acres of forest. It was also estimated that each day the "New York World" consumed timber equal to 7 acres of an average forest. The world's timber suitable for paper-making is not inexhaustible, and we may some day be in a position in regard to wood as this country was at the end of the last century in regard to the supplies of rags.

— **SWEET VIOLETS.**—As Violets are much in evidence along the London thoroughfares, writes a correspondent, the following incident may be of interest. I was in a chemist's shop when a coster girl entered with a large basket of Violets and set it on the floor. I bought a bunch, and then noticed the chemist's assistant pass a small glass phial to the girl, the contents of which she emptied into the basket. "Tricks of trade," said the chemist with a smile, while the merchant gave him a look of sly humour from under her hat. "What was that she bought?" I asked. "A penn'orth of wood violet," he replied. "Those French Violets don't smell. They rest on moist moss in the basket, and the moist moss absorbs the perfume. That penn'orth will sell the basket." Then he told me that a "penn'orth" of musk perfume was used to improve the selling quality of pots of Musk, and that he had had a hawker similarly ask: "A penn'orth of white rose, guv'nor." As I went away I figured to my mind an old lady bending over that basket in response to the merchant's observation: "Fresh, ma'am? Just smell for yourself."

CHARACTER UNDER CANVAS.

PHILOSOPHERS AND —.

THERE must be something soothing in the word "philosophy," judging by the way it is hugged and fondled. It presents itself as a sort of infant phenomenon, prepared at a moment's notice to be cast for any part, to the joy and pride of its affectionate parent. But as in the talented company of Mr. Vincent Crummies, the unhappy player whom fate always flung into the same piece as the phenomenon grew deadly tired of the association, so possibly in the band of players who appear before the delectable audiences at the Horticultural Theatre there may be one or two who are weary of so much "philosophy," and pine for plain common sense.

The worst of philosophy is its irresistible attraction for many excellent and worthy persons, who like plain work but cannot bring themselves to call it by a plain name. Thus, when I start out to tilt at "philosophy" I may be unjustly suspected of tilting at men for whom I have nothing but admiration and respect. The philosopher who at the core is a true, sensible, honest soul gets mixed up with the large and increasing number aping the same name, whose voices are getting noisier in the world every day, yet whose heads are either empty or inflated. The sooner we make up our minds to call plain things plain names—when we learn to modify art and content ourselves with craft, to let common sense be our guide instead of philosophy—the sooner we shall be in a position to say that we are sure of our company. A good craftsman is better than a bad artist; a sound gardener can give useful lessons to any philosopher.

Passing to character under canvas at gardening exhibitions. The man who, in the disappointment of a defeat, hurls a torrent of abuse at the judges, represents human nature let loose that is a little unreasonable and a little vulgar, but still something that can be reckoned with and, with tact, controlled. On the whole, I respect the much-maligned "bad loser" rather more than the good one. It will be a bad thing for Britain when her sons all learn to take a thrashing "philosophically." Parliamentary proceedings have been enlivened of late by a discussion—and this is where the dash comes in—on "scallywags," and it has been elicited that the species known under this interesting name is usually the best fighter. He breaks bounds, derides discipline, and goes on generally in a way not approved in polite military circles; but when a bit of hot work crops up there he is in the van, laying about him with gusto. So the Army loves its scallywags, although it chastens them. In the same way, perhaps, the broad-minded horticultural judge has a sneaking respect for the noisy exhibitor whom defeat in the Grape class excites to angry reflections on the practical knowledge of the gentlemen who have "plucked" him.

But the philosopher in the tent is a different animal. He is not exactly human nature, and the less human nature there is in a man the more difficult it is to know how to manage him. Occasionally he is genuine. When he expresses open satisfaction with the judging and resignation to his defeat he means it; but far more often the philosophic outpourings are a cloak to something else. He is one of those who hold with the cynic that language is given to conceal thoughts; to bottle up for the time being, and uncork when the judge is safely departed and unable to defend himself against the insinuated charges of incompetence and favouritism. This philosopher of the tented field knows how and when to strike; he chooses his time with patience, but when an open fight comes he gets behind the scallywag.

There is another philosopher to be fought shy of, and that is the exhibitor who gives disinterested advice and assistance to rivals. He, too, is genuine at times, and nothing is finer than to see good sportsmanship holding sway; would there were more of it. But not infrequently the kind adviser has a thought for himself. There is a true story, known only to a select few, of two neighbouring gardeners who were competing with others in a class for a collection of vegetables very early in the season. Just on the verge of setting up, one of the two discovered that he had a dish too many. What was to be left out? He had to decide on the spur of the moment, and he was not strong enough to rise to the occasion. Happily he had his friend beside him, and that noble individual, with a self-abnegation worthy of the highest admiration, philosophically consented to give a piece of impartial advice. Critically surveying the collection, he pounced on a dish of French Beans. Not know what to take out! Look at those wretched Beans, and think again! The unhappy exhibitor fell into the snare and threw out the dish. He would have thrown the philosopher somewhere if he had caught him after the award was made, for the kind adviser was first, and proudly boasted of the ingenious way in which he had induced his most dangerous rival to get rid of his strongest dish.

There is a gay and humorous philosopher in a certain district who is noted for his smiling cheerfulness under all variations of the judicial barometer. When it is at set fair he smiles, when it is at unsettled he smiles, when it is at stormy he smiles. He is popular with judges because he never abuses them, but on the contrary always expresses his perfect confidence in them. Like the heathen Chinese he is ever child-like and bland. He thinks confidence begets confidence. He uses very large name cards for all his exhibits, and he consistently attaches them to the worst specimens in the various dishes. Extract the huge pin which secures the card, remove the latter, and a disease patch or other blemish is laid bare. But the philosopher still smiles. He is caught for once, but he hopes for better luck next time—and another judge. As for the judge himself, he sighs for the scallywag.—W. PEA.



ROSE NOTES.

WHEN I wrote the recent article on pruning we were having spring-like weather, and a large number of growers were busy with the knife. Although our Roses were by no means forward, neither for the date nor exceptionally mild season, one was tempted to begin earlier than usual. But we soon had a taste of winter, and although we happily escaped storms and snow, it was enough to check the rapid pruning going on. On the 13th inst. we had 13° of frost (Fahr). It has been advocated that such late growers and bloomers as Baroness Rothschild and Merveille de Lyon should be pruned a week or two earlier than other Hybrid Perpetuals; but did anyone really observe that this early pruning caused a correspondingly early break? I have pruned half a dozen plants of each at an interval of three weeks, and, although they were side by side, failed to discover any material difference.

Having recently seen some young Roses under glass that were badly attacked by mildew, it occurred to me how much more prone some varieties are than others to this pest, whether in the open or under glass. I noted that Innocente Pirola, Edith Gifford, and Souvenir de Paul Neyron were most affected in the above instances. They are also our worst Roses in this respect outdoors. One can scarcely put the attack down to a feeble constitution, for Edith Gifford is a hardy and robust grower. Then how seldom we find mildew on the Manetti stock while the Dog Rose or common Briar is particularly liable to infestation. We do not find it (except in rare cases) on the Banksians, which, although very strong growers, are certainly much influenced by chills. As further proof that feeble or tender-growing Roses are not prone to this disease more than others, let us call to mind how badly Her Majesty, Margaret Dickson, Abel Carrière, and Madame Gabriel Luizet are affected; while we find Ulrich Brunner and Gloire Lyonnaise almost exempt.

I am looking forward to reports from various growers of the way Rose wood has come through the winter. Perhaps this is premature, for I remember that the end of March was very severe in 1893. At present my own wood is in grand condition, and I do not notice that Fortune's Yellow (the tenderest Rose we grow) has any injured wood. When reports are given upon the wood, which can scarcely be done thoroughly except when pruning, I hope all will give their locality, and if close to water or upon high ground. Such reports can be of no service otherwise.

Already the Hybrid Sweet Briars are pleasing. They are considerably more forward than the common variety, and make their presence known by the perfume of bursting buds before coming into leaf. They are quite hardy in this country, and would soon make an impenetrable hedge. I have the first set over a large arbour, and which can be completely covered this spring when tying down the ripened branches. If Lord Penzance could only impart the scented foliage to our miniature Polyanthus without additional strength in growth, what pretty and sweet-scented little pot plants they would make!

How grandly Roses in unheated houses are coming on; but unless we keep them back as far as possible, we shall suffer later on. There is such a vast difference in temperature in an unheated house. A clear day, even with a keen wind outside, soon raises the temperature to 60° or 70°, only to fall to almost freezing point should the night be cold. It is a mistake to hurry Roses in such a house. We also suffer much from mildew, and the damping of young leaves during a spell of dull weather. Even one row of pipes around the house would avoid this humid atmosphere, and tend to equalise the temperature. In a house some 60 feet long, 24 across, and 12 feet to the top of the span, I have seen some grand Rose blooms cut already, and this house only had one row of 4-inch pipes around it. There will soon be a fine crop if the temperature can be kept fairly uniform. Climbing Perle des Jardins, L'Idéal, Rubens, Catherine Mermet, Niphotos, and Maman Cochet were the best when I saw them, on the 11th of the present month.

The foliage of Roses deserves attention. Some of them are by no means bad foliage plants in themselves. Take Perle de Lyon for example. This has the deepest shaded bronzy purple leaves we can imagine, and although not of much value as a flower, is well worth growing for its foliage alone. Maman Cochet is exquisite under glass just now; far deeper in its salmon shades than from open air plants, and although its own foliage is good, when the flower is placed with the bronzy leaves of Perle de Lyon the effect is greatly heightened. I do not care for other foliage with flowers than Nature provides, and have often been looked upon with horror by the gentler sex when disapproving of the universal use of Maidenhair Fern. But this is a different matter, for do we not try to get perfume, size, form, and various other characteristics transmitted to those not possessing it?

A deep green foliage suits a white Rose, but the bronzy purple is almost ideal for apricot yellows and deep salmon flesh shades. What beautiful shades a young leaf of Duke of Connaught possesses. Then we have the deep green of the Rugosas—Roses, by the way, that I have never found affected by mildew.

No less than three times during the present season I have been asked for the "Yellow Provence" Rose. This is so frequently the case that I have looked up many old authorities; but, as I felt sure would be the result, without success. Do any of your readers know of it? or could they give any aid? I believe either the Persian Yellow or Harrisoni was meant in each case.

Rose pests will soon be very numerous, but need do no great harm under glass, if we will only bear in mind the value of taking prompt measures towards their destruction. Nor need these be of so drastic a character as is often used when the enemy has gained a firm hold. It is easy to kill the aphides, thrips, and red spider if we syringe freely from the first and use a mild insecticide. I am not promising total extermination, but an early check that will prevent the insects doing irreparable damage and save our plants from the need of powerful insecticides. It is such an obvious error to leave the foes alone until they have increased in the enormously rapid way they do that there should surely be no need for any reminder. And yet we find, year after year, plants so left as to become hopelessly crippled.—PRACTICE.

PEACHES AND NECTARINES.

IN the majority of gardens these luscious fruits are extensively cultivated, and it is essential that those in charge shall annually produce good crops. Unfortunately the best results are sometimes prejudiced by neglect of one or more of the several operations, and I have penned the following brief notes as reminders to my brother craftsmen, who have probably found to their cost, as I have, that with disbudding and other points procrastination is one of the worst of sins.

DISBUDDING.

Attend to this early, but it must be done carefully, commencing as soon as the shoots can be displaced with the finger, and following up day by day until only the shoots required for future bearing are retained. Leave one shoot at the base of the branches or last year's shoots now fruiting, and another on a level with or above the fruit; the latter not being required for extension must be stopped at a few joints of growth. In the case of trees not fully grown it will be necessary to leave shoots about 15 inches distance apart, calculating from the base of last year's growth, to form the bearing shoots of next year, the terminals being trained in full length as space permits. The leading growths must not be less than 12 to 15 inches apart. Close training is practised, with the result of weak crowded growths, not nearly so satisfactory in fruit as growths fully exposed to light and air.

THINNING THE FRUITS.

Directly the fruit is fairly set and those properly fertilised can be detected by their taking the lead in swelling, commence thinning. Remove the smallest first and those on the under or at the back of the trellis, beginning with the weakest parts of the tree, thinning proportionately more than on stronger wood, which will tend to the equalisation of the vigour of the tree. The fruit ought not ultimately to be left closer than one to every square foot of trellis covered with growth, in order to have fine specimens of the large-fruited varieties; but the medium-sized kinds, such as Early Louise, Hale's Early, and Stirling Castle Peaches, with Early Rivers Nectarine—indeed, Nectarines generally—may have one to every 9 inches square of trellis covered by the trees; even the small varieties are the better for the latter mentioned amount of space, especially on weakly trees. The first thinning must commence not later than when the fruit is the size of horse beans, the second when the size of marbles, and again when the fruit is the size of Walnuts, leaving very few indeed over the proposed crop, though there must always be a margin for casualties.

SYRINGING.

Syringe all trees not in flower, but having the leaves advanced in formation, twice a day when the weather is bright, so as to keep them free of red spider. Attend to the afternoon syringing at closing time, or sufficiently early to have the foliage nearly or quite dry before night. Vigorous trees with sappy growths and large leaves require less syringing than trees with sturdy well-formed growth and stout textured leaves, the strong growth perspiring considerably at night, moisture often hanging on the leaves in the morning, whilst the foliage of the adjoining sturdy growing tree is dry. If the trees have water hanging from the points or edges of the leaves in the morning, omit the afternoon syringing, and on dull days damp the path and border instead of syringing the trees.

TYING-IN THE SHOOTS.

When the growths are sufficiently advanced tie them carefully to the trellis, not bringing the shoots into place too sharply. In securing the shoots to the trellis take care to leave sufficient space in the ties, for too tight tying, abrasions of the bark, and similar injuries, are prolific of gumming, and too tight tying otherwise causes an indent which renders the shoot liable to breakage at that point.—PRACTITIONER.

THE SCIENCE AND PRACTICE OF FORMING FRUIT TREES.

RESULTS OF PRUNING AND NON-PRUNING AFTER PLANTING.

THE non-pruning of a tree (P) at planting is shown in fig. 58. All the growths were left entire during the first season. Having a good root system on the dwarfing stock, and not of unduly vigorous development previously, such a tree will push most, if not all, of the buds from the extremities of the shoots to the base. The growths will be strongest at the top, weakening to the base. The leading growth (f) will be the most vigorous, the short and weak (g) stubbier or spur-like. Some buds, however, will remain dormant, as represented in Q at h, and the shoots on that part (R) will be wood buds (i). The roots will correspond with the parts above ground—namely, plentiful and fibrous (j).

Under favouring circumstances blossom buds will form the first season, particularly if of an early bearing variety, so that fruit may be had, if desired, in the second season, as indicated in the tree (S) at k. This

growth as outlined, while at its base also are smaller buds (s), these also pushing and producing stubby shoots or spurs.

The tree practically, under these circumstances, is on a level with that figured at 1 (page 263, last week), but a year older, meaning a year lost. The roots have also become similar; but those corresponding with free growth are stronger, as shown at t. The roots (u) in the mulching are adventitious and possess cuticular cells, imbibing nutriment fast enough without the aid of root hairs, and are relatively smooth, as shown at w.

There can be no question of the moderately shortened tree being the more profitable, but why a freely grown young tree should not be pruned the first year I could never understand. The non-shortening of short branches answers very well, because the root power may be strong enough to force free growths from them; but the shortened roots of the tree dug from a nursery are unable to produce free growths from the long strong branches. It is for that reason the branches are cut back, and then free growth follows, instead of premature fruiting and a stunted tree.

Endeavour has been made to point out the advantages or the reverse

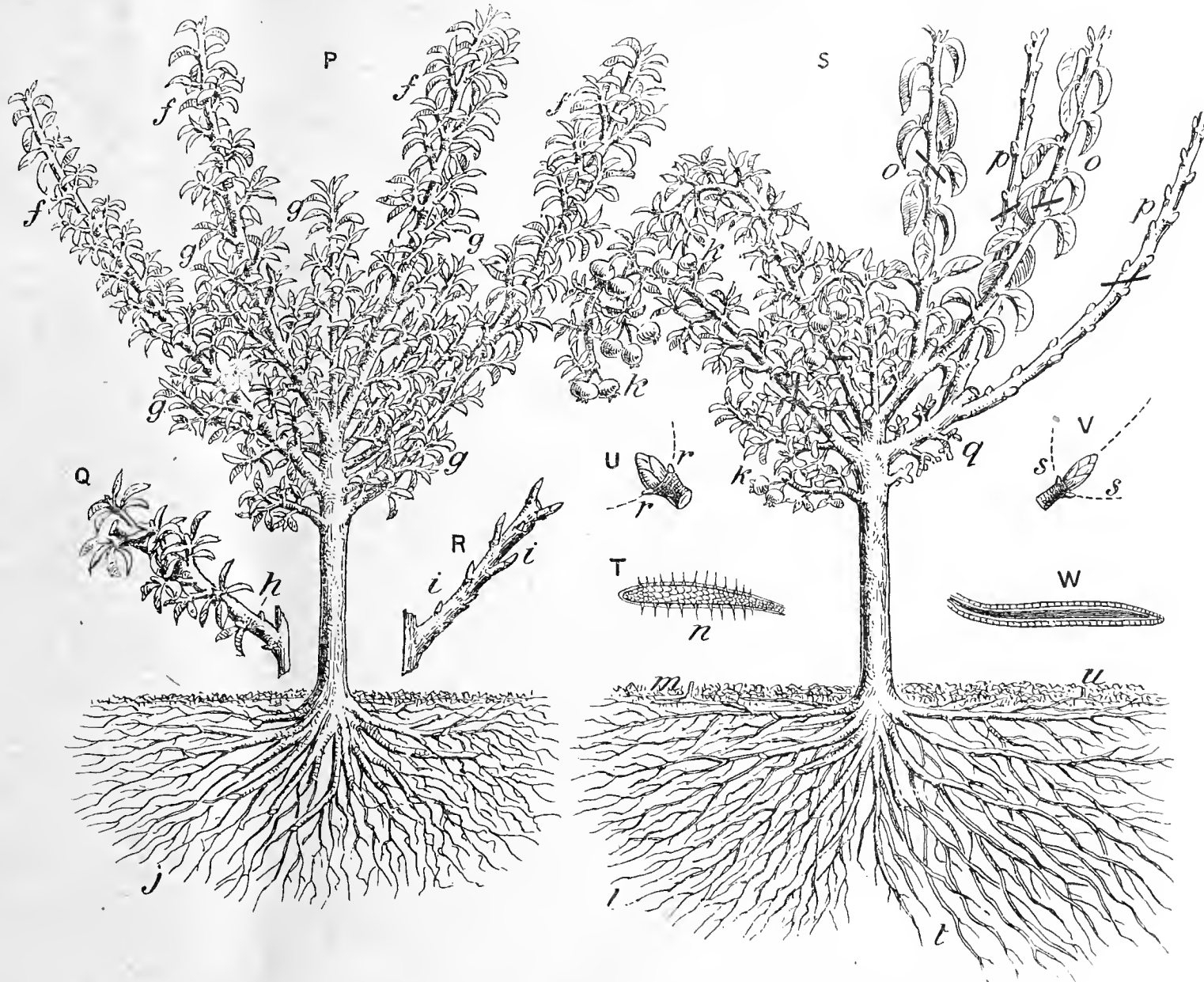


FIG. 58.—RESULTS OF PRUNING AND NON-PRUNING YOUNG TREES AFTER PLANTING.

References.—P, Unpruned tree in leaf during the season following planting; f, long and strong unshortened shoots; g, growths from weak shoots of the previous season. Q, basal part of long and strong shoot, showing stubby growth; h, dormant buds. R, basal part of two-years branch; i, wood buds; j, root formation of tree. S, tree in the second season, showing—on one side results of non-pruning—k, fruit; l, fibrous root formation; m, feeding root in mulching. T, point of rootlet magnified, showing (n) root hairs. Opposite side, the result of shortening two-years branches at the marks under k closely: o, extension shoots in leaf; p, similar leafless, and marked for pruning; q, spurs. U, blossom bud of Apple; r, wood buds at base. V, terminal wood bud; s, small wood buds giving rise to spurs; t, root formation corresponding with strong wood growth; u, adventitious rootlet in mulch. W, rootlet magnified.

implies a stunted tree, though the roots will be fibrous (l), some of them pushing into the mulching (m). Such roots, if carefully lifted and examined with a lens, will be seen to have root hairs (n) for abstracting nutrition and transmitting it to the leaves and fruit. The check of lifting and the retention of all the growths have induced this precocious habit (k). All sudden checks and impaired reciprocity between roots and branches conduce to what we are pleased to call fruitfulness, but in reality a struggle for existence under threatened conditions of extinction.

But the wise cultivator does not want to laden his trees with fruit so early, as he knows there cannot be any real progress towards a profitable occupation of the space without growth on a more liberal scale. To insure this the four long and strong shoots are cut back as indicated by the bars below k, and in result we get free growth from each cut-back branch (o) in leaf, (p) leafless, while there are spurs at q. Some of these may probably have a blossom bud (U) relatively plump and round, and always with small buds at the base (r), which will develop into either spurs or shoots as the forces of the tree determine; or, the stubby shoots may be terminated by a wood bud (v), this in due course pushing a

of the systems most commonly in vogue in shaping trees for the natural or standard bush form. Young branches must be shortened to produce more and stronger, on the same principle that a maiden tree, with its solitary branch, is cut back to form a bush. When sufficient branches are formed to produce an open bush or head, the less of shortening the greater the production of natural spurs. With ample space every branch then becomes a cordon to be roped with fruit from base to extremity, and each should be strong enough to bear its load.—G. ABBEY.

A PLETHORA OF GARDENERS.

SOME articles have recently appeared in the Journal relative to the present outlook in the gardener's career. Without undue criticism I should like to touch upon some of the remarks which have been made by different correspondents. My observations will be solely confined to the position of gardeners in private establishments. There is no question

but that the outlook is a serious one, and requires remedial measures, which should rest with the gardening community to afford.

Young men commence their gardening career in one of the large establishments in the country, and pass from one noted place to another as journeymen. They have, many of them, a lofty ideal before them; they are enthusiastic. They "love to linger and survey the promised joy's of life's unmeasured way." They have cultivated their minds as much as the leisure and circumstances would permit; and for this purpose have read and studied current gardening literature, also some scientific works bearing on their vocation, while they have not neglected the works of the great masters in English literature. By these means the worthy aspirants have insensibly acquired refinement of mind and manners, added to proficiency in their business; but alas! with all these, and good moral conduct, they find themselves at the period when they hoped to obtain the position they have long desired, and for which they have worked, beyond their grasp. Thus, like the wise king of Israel, they find "the race is not to the swift, nor the battle to the strong," but that everything comes by time and chance.

The thought has occurred to me more than once, and I must confess has been forced upon me by many vicissitudes and changes, that the present system of manufacturing gardeners is the potent evil with which we shall have inevitably to cope in the near future. Have we not men distinguished in horticulture to whom the young aspirant looks up to with awe and wonder? Could not these men who have established horticultural societies form a committee who would assist journeymen and foremen in procuring situations? The present system seems to me to be very unsatisfactory. Young men have passed through gardens of considerable note where a large and continuous supply of fruit, flowers, and vegetables are demanded throughout the year, and where floral decorations are extensively done with much style and taste. They may have been foremen in one or two similar establishments, yet from force of circumstances over which they have no control are obliged to enter a nursery where they may be offered some half kept or small place where there is no demand for anything in particular. If they accept such places, the knowledge they have been at so much trouble to acquire is of little value. If it were possible for a committee composed of men who have had long experience as gardeners in good establishments, and who have perhaps vacated their situations, they would be able from their knowledge to select and recommend only such men as are qualified by former experience for the particular place in hand. Thus, perhaps, might be avoided the anomaly of men from large places going into small ones, and men sent into positions for which their former experience does not qualify them.

It would possibly be well if men should not be considered eligible to take a foreman's place in a really good garden without having first obtained a certificate of proficiency, not exactly in scientific attainments, but in practical knowledge. This would debar some of those whose leisure is spent in the public house, or in the study of the sporting papers; or whose winter evenings are passed at the card-table instead of acquiring mental improvement. To enter into such a scheme as I have endeavoured to point out, it would be necessary that funds should be raised for the purpose for supporting such a society or committee, but considering the vast community of young gardeners it would benefit, this ought not to be a serious difficulty.—F. STREET.

NOTES FROM WESTON HOUSE.

It is not my intention to notice in the present instance either the mansion or the delightful scenery by which Weston House, one of the estates of the Earl of Camperdown, is surrounded. Suffice it to say that from the summit of the ridge on which the mansion stands, and from many parts of the delightful grounds and well-timbered park, may be obtained extensive and picturesque views over a vast area of the fair county of Warwickshire to the south, whilst to the north and north-east the eye wanders over a wide and extensive district of undulating land, interspersed here and there with rich woodland scenery, the view in this direction terminating with the Malvern Hills.

Taking our route through the main entrance gates, we pass by the south front of the mansion, before which is an extensive flower garden laid out in geometrical designs with neatly clipped Box edgings. Many of these beds being of considerable size, large numbers of plants are annually utilised, the whole producing a charming effect from the terraces and windows of the mansion. To the right of this garden stands a magnificent *Araucaria imbricata* some 40 feet in height, and of great age and girth.

From the terrace gardens through a portion of the pleasure grounds, which are well studded with *Rhododendrons* (and choice *Coniferæ*, a *Wellingtonia gigantea* standing out boldly and forming a prominent feature in this part of the grounds) we reach an avenue of *Limes*, the turf beneath being covered with *Snowdrops*, *Daffodils*, and *Aconites*, which have a charming effect. I may mention that this part of the pleasure grounds is not mown except twice or thrice annually with scythes. This is in keeping with the beauty of the surroundings, and forms a fine contrast to the well-kept and closely mown terrace gardens adjacent thereto.

The kitchen garden comprises about 5 acres within the walls, which are 12 feet in height, and clothed with a collection of clean, healthy, and well-trained fruit trees. At the time of my visit dozens of trees of *Apricots*, *Peaches*, and *Nectarines* were a mass of bloom, and they gave every promise of a grand set of fruit, being well protected from spring frosts and keen winds by curtains of *frigi domo*, which are easily drawn when required, they being fitted with rings, which run along iron rods at the top of the wall. Large numbers of beautifully trained pyramid trees

of *Apples*, *Pears*, and *Plums* are dispersed over the garden. These all look in the best of health, and show evidence of a master hand. One quarter in this garden is devoted to bush fruits, as *Currants*, *Raspberries*, and *Gooseberries*, the latter being trained as pyramids, and which I am informed do remarkably well. They certainly looked far preferable to the low bushes so common in gardens, though I was pleased to see that the cordon system of cultivating this luscious fruit is obtaining favour with the gardener, Mr. Masterson, he having recently planted a long trellis of strong young trees.

The other quarters of the kitchen garden are devoted to *Strawberries*, *Asparagus*, *Onions*, *Celery*, *Peas*, and the many vegetables which are indispensable in a large establishment. I noted on the south border a long stretch of early *Peas* well through the soil, and looking in the best of health, being protected with branches of evergreens. On another border running north and south were some hundreds of *Carnations* grown for cutting purposes, and containing some of the newest and best of the older varieties.

The under-glass fruit department is equally well tended as the outside, the vineries being planted with such well-known varieties as *Hamburghs*, *Foster's Seedling*, *Muscats*, *Alicantes*, and *Lady Downe's*. The early house is well advanced, and carrying a good crop of well-formed bunches, the thinning of which has now commenced. In this house was noted a shelf of *Strawberries* (*Keens' Seedling*), the fruit of which had commenced to colour. Successional plants were being introduced into the various houses as required. The principal varieties grown are *Royal Sovereign*, *Vicomtesse H. de Thury*, and *Sir Joseph Paxton*. Then there are large quantities of bedding plants, and some well-grown *Cyclamens*, carrying large numbers of well-developed flowers, the colours being varied and beautiful. The Melon pits are at present utilised for propagating purposes, to be planted with *Melons* and *Cucumbers* shortly. The Peach house, which is span-roofed, contains some half dozen trees, well set with fruit.

The stoves, two in number, were originally vineries, for which they are better adapted than for plant houses. However, they are well furnished with climbers on the roof, which are found invaluable for cutting purposes. These comprise *Allamandas*, *Bougainvilleas*, *Clerodendron*, *Stephanotis*, and *Euphorbias*, whilst beneath these such plants are cultivated as *Gardenias*, *Pancratiums*, *Bananas*, and *Ferns*. They do not appear to resent the partial shade afforded by the climbers. Orchids are not grown to any great extent, though I noticed a few plants of *Cœlogyne flaccida* in bloom suspended from the roof, also fine specimens of *Dendrobium nobile* and *D. densiflorum*.

The number of heated pits and frames is considerable, and the majority of plants grown in them are such as are found most serviceable for supplying large quantities of cut flowers and for house and conservatory decoration. Several are occupied with *Violets* of the *Marie Louise* type, whilst in others are about 300 splendid plants of the newest *Chrysanthemums* on the large bloom system, and about 500 in bush form. Large clumps of *Lily of the Valley* are annually lifted from the open, and these, being forced in successionally, produce hundreds of spikes, which, when cut and bunched up with their own fresh green foliage, are much appreciated.

Much more might with justice be said concerning the features of these gardens, which have been under the management of Mr. John Masterson for over twenty years, and reflect great credit on his skill and assiduous care. I take this opportunity of briefly thanking him for his genial kindness to us on the occasion of our visit.

The conservatory, situated near the mansion, is a lofty well built structure, the roof of which is clothed with various magnificent climbers, including *Tacsonias*, *Fuchsias*, *Cobœa scandens*, and *Rhynchospermum*, while in the dome are rambling the beautiful *Lamarque* and *Devoniensis* *Roses*, giving indication of supplying in the near future thousands of blooms. On the centre bed some fine pyramidal-trained *Camellias* were in bloom, and interspersed between these are towering immense *Palms* and *Tree Ferns*. The back north wall is also well covered with *Camellias*, whilst round each side are arranged well flowered plants of *Cinerarias*, *Primulas*, *Cyclamen*, *Azaleas*, *Celsias*, *Callas*, and a host of others so indispensable for the embellishment of such a house.—VISITOR.

THE WEATHER AND FRUIT PROSPECTS.

THE weather during the past week has been of a variable and wintery character. The early part was fine and dry, with cold frosty nights, but on the 24th a bitterly cold north-easterly wind set in, which increased to a gale, accompanied by blinding showers of snow and hailstones. The snow drifted a good deal in places. The average depth was about 6 inches, but soon melted and percolated into the soil, which was dry and parched. The day temperature did not rise much above the freezing point. The two following days—25th and 26th—were of a similar character, with high and boisterous winds, doing some damage to trees and shrubs.

This cold wave has set in at an opportune time to check vegetation, which was getting in a forward state; but I fear *Apricots* in this neighbourhood will be a failure. *Peaches* and *Nectarines* on unprotected walls are in an advanced stage, but up to the present time they do not seem to have suffered much. A few *Plums* are in bloom, one tree of the *Grand Duke* on a north wall being in a very forward state. Owing to the late spell of arctic weather, *Pears*, *Apples*, and bush fruit seem to be a good deal retarded.

The lowest temperature registered during the month was 15° on the 7th inst.—G. R. ALLIS, *Old Warden Park, Biggleswade*.



A SUCCESSFUL YEAR AT WINCHESTER.

WE are glad to observe in the report of the Winchester Horticultural Society that as the result of the last Chrysanthemum show the balance in hand was raised from £55 15s. 9d. to £71 5s. 2d. The Society is admirably managed, and its autumn shows, though limited by the size of the Guildhall, rank as regards merit among the best in the kingdom. The executive committee, of which Mr. F. W. Flight is chairman, is composed mainly of professional and commercial gentlemen, but gardeners and nurserymen have each a representative. Mr. Chaloner Shenton is the Honorary Secretary.

NATIONAL CHRYSANTHEMUM SOCIETY.

FROM your report of the above Society's meeting it will be at once inferred that I had no confidence in Mr. Sanders' impartiality, and for that reason wished his removal from the chair. May I be permitted to say that the extreme opposite was my view of the matter? I called attention to the difficulties of his dual position, and to the fact that I believed the meeting had the greatest confidence in his absolute impartiality. The logical conclusion of this was that individually the decisions of the chair must be respected, and collectively they must be supported. I took this course in view of the pent-up feeling which seemed to exist, and could only do so under the cover of a motion—that of adjournment being the most convenient.—ROBT. FIFE.

[This is exactly what we apprehended on reading our reporter's "copy." We did not for a moment think the proposition a reflection on Mr. Sanders, whom we believe incapable of swerving from the line of right, and we cannot imagine anyone who knows him having a doubt as to his strict impartiality as Chairman of the N.C.S.]

THE "CARNOT MYSTERY."

AS a grower and exhibitor of Chrysanthemums, I should like to ask those who have had opportunities for comparing the various "Carnots" if they will kindly describe their colours as they have seen them.

I have only seen one of the so-called yellow varieties, and that under the name of G. J. Warren. The blooms which came under my notice have all been a very pale canary yellow. Mine are, or could be, described in the same words as used by Mr. H. J. Jones when describing Mrs. W. Mease.

Yellow Carnot or G. J. Warren are described as deep canary yellow. I am sorry to say I have not seen any of that colour yet, and would be glad if some of your correspondents would clear up what we might call the "Carnot mystery." Other growers are in the same fix as myself, and will not order Mrs. Mease, being, in fact, afraid to do so, in case the variety is not distinct enough to be placed on the same stand with G. J. Warren or Yellow Carnot. The Belfast dispute and Mr. Beckett's opinion of the flower staged as Primrose Carnot has something to do with the existing doubts; even Mr. Wells seems to have been in doubt, and when men like those mentioned are not sure, what about the rank and file of the growers? Therefore, in the interest of the latter class, I should be glad if a little explanation and instruction could be given in the *Journal of Horticulture*.

Will some disinterested growers describe, if possible, the different varieties of "Carnots," for we all dread disqualification when the critical moment comes? A case in point may be mentioned. I once staged Golden Queen of England and Emily Dale, when the latter was sent out as distinct, and being my first attempt to gain a prize, was very much annoyed on finding my card reversed, and the one word "disqualified" plainly written on it. That was a lesson never to be forgotten.

I enclose a circular by W. Wells; in it you will notice he places G. J. Warren and Yellow Carnot as identical, while he quotes Mr. Lees as praising the one and condemning the other. This all tends to mystification. I plead for enlightenment. I should be glad if some independent authorities could briefly describe the different "Carnot" sports for clearing up the mystery. I trust you may find room for the information requested, and which would be welcomed by many readers.—ALEX. HAGGART, *Moor Park, Ludlow*.

[We shall gladly find room for suitable communications on the perplexing subject.]

CHRYSANTHEMUM NOTES.

I NOTE this year a commendable practice is being adopted by many societies—viz., the early issue of the prize schedules. Both societies and exhibitors suffer when the schedules are sent out only a few days prior to a show. Especially to the smaller cultivator does this apply, for, as a rule, he confines himself to the strict requirements of his particular classes, want of space being the cause of this. Schedules issued in April or May admit then of no reasonable reconstruction of his forces in the matter of variety and number of plants.

So much interest is now taken in the cultivation of Chrysanthemums, that the class comprising the small grower and the amateur is distinctly on the increase, and their enthusiasm is unbounded. I have often been

surprised at the extent of the purchase of new varieties by the amateur. With this cultivator there is a distinct understanding that up to date they must be in the matter of variety.

The rate of progress in the quality and extent of the Japanese section of the Chrysanthemum is admittedly fast. If, however, some society would offer prizes for, say, two or three dozen varieties introduced previous to 1890, another series at a space of five years, and a third for up-to-date sorts, the real rate of progress and improvement could be accurately gauged. What is improvement in a Japanese Chrysanthemum is a disputable point, and one not universally acknowledged.

A brief reference to a few cultural points may not be unacceptable to the beginner. I note, too, a growing tendency amongst the experienced to treat the Chrysanthemum as hardily as possible. It is really a hardy plant, and any undue alteration cannot fail to be detrimental. To the inexperienced I would say, Root your cuttings under cool conditions, and grow them as sturdily as possible. Immediately the plants are well rooted get them into cold frames, where they cannot become weakened by undue heat, as is the case occasionally in the greenhouse or vinery. I need hardly emphasise the necessity of keeping the plants as near to the glass as possible in the early stages of growth, as it is common knowledge that without a stout foundation you cannot have a satisfactory superstructure. In the Japanese section especially is it imperative to secure robust leaves, and it is surprising what a difference is manifest in the manner in which the blooms, and the leaves also, remain fresh when cut as compared to those on weakly grown plants.

I am acquainted with cultivators who aim at reducing both the size of the wood and leaves. Especially does one instance of this occur to my mind. Calling on an enthusiastic beginner in August last year I remarked, "Your plants look nice, but I should have liked them better if they had been half as thick again." With a look of astonishment he replied, "Why, I have been trying to keep down robustness as much as possible." I said, "Well, results will prove the advisability or otherwise of such treatment." A very poor record of prizewinnings had my friend to show for his labour.

To the compost for the second potting I advise the addition of some directly stimulating food. For instance, I use Thomson's Vine manure, at the rate of 1½ lb. to every bushel of compost, for the reason that if the plants do not lay the foundation for a vigorous growth at the proper time, they do not thicken downwards afterwards in the right proportion. The attempt to accommodate too many plants is a common fault. Far better successfully manage fifty than spoil 100, is the maxim I would teach. Two other failings I have from time to time observed. One is, incorrectly supplying the plants with water; and the other, neglect in repotting at the proper time. In the first instance too much water is often given, causing a check to free root action, resulting in a loss of chlorophyll or colouring matter in the leaves. I have often been surprised to find how little water some varieties of Chrysanthemums will flourish upon. No plan will restore the lost colouring to the leaves as quickly as keeping the soil about the roots in a partially dry state after they decline in their natural colour. Stubborn cases may be remedied by the application of a pinch of sulphate of iron in the water, which ought to be applied in a tepid condition for a time.

Neglect in potting the plants in their early stages of growth means a loss of vigour by the continued cramping of the roots, which in itself cannot do otherwise than cause a check to that freedom of growth so desirable. Not only does it do this, but it is frequently the direct cause of a loss of many of the primary leaves at a time when we cannot afford to lose them. A check to the growth of Chrysanthemums in any form cannot be other than injurious to an extent not always appreciable at the moment.—E. MOLYNEUX.

ROYAL HORTICULTURAL SOCIETY.

MARCH 22ND.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters (in the chair); Prof. A. H. Church, Mr. T. Hudson, Mr. Michael, Mr. A. Sutton, Dr. Müller, and Rev. Prof. G. Henslow, Hon. Sec.

Orchid Roots with Fungus.—With reference to the nature of the fungus attacking Orchid roots in a damp atmosphere, referred to at the last meeting, Dr. W. G. Smith of the Yorkshire College, Leeds, writes as follows:—"The Orchid aerial roots sent contained a fungus which lives on them and has killed some already. The absence of any form of reproductive organs renders it impossible to identify the parasite. Other portions of diseased plants (i.e., leaves) would be required to ascertain the true nature of the fungus. The fungus present attacks living cells, consumes the food laid up by the plant, and finally kills the roots. A disease having somewhat the same effects has been found in the Vanilla plants of Mauritius."

Palm Leaves Discoloured.—Mr. W. A. Holmes, F.R.H.S., of the Putney Nurseries, sent some portions of Palm leaves with numerous translucent spots. They were received from the Continent. An examination appeared to indicate a previous attack by insect grubs, but none were present, the interior tissue having disappeared from the spots; so that the new leaves would probably be quite healthy.

Vine-Browning.—Mr. Hudson showed a young shoot, the leaves of which were blistered and brown. This is due to the presence of the well-known myxomycetous fungus, *Plasmodiophora vitis*, allied to *P. Brassicae*, the "slime fungus," which gives rise to "club-disease," or "fingers and toes," in cultivated cruciferous plants. The only remedy is to cut away and burn all affected leaves or shoots. It is described and figured in Viala's *Maladies de la Vigne*, p. 400.

Ivy Sports.—Dr. Masters exhibited sprays of a peculiar small-leaved dwarf Ivy, remarkable for sending up vertical shoots with distichous leaves, though unattached to a wall. The habit appears to have become fixed, even in free-growing branches. On some shoots, however, the leaves were spirally arranged, as is usual on such branches. It may be observed that the change from the distichous arrangement of the leaves on the horizontal branches of the common Laurel to a spiral one, when the boughs grow erect, is common; but it is not a fixed character.

HARDY SHRUBS AND PLANTS IN TOWNS.

UNLIKE most if not all other departments in gardening, scarcely anything has been written about hardy plants and shrubs in towns. No one seems to have made them a special study. We have no authority to consult, but all has to be learned from actual experience, which is, of necessity, a slow process. I therefore propose to make reference to plants which have come under my own observation in a low, damp locality with a clay soil. Had they referred to a town situated in a high, rocky position, or in a light sandy or gravelly soil, the results would no doubt have been different.

It is not only the cold and smoke that act prejudicially on many plants, but excessive dampness causes not a few that grow well during the summer to succumb during the winter. Good drainage, the addition of opening material to the soil, and not planting too deeply, are the best methods to adopt with the object of reducing the losses to a minimum.

As might be expected, deciduous shrubs succeed better than evergreens. Amongst the former, the common Lilac always thrives well, and sometimes flowers freely. The Persian is not nearly so satisfactory. I could never make out why one is called the common Lilac (*Syringa vulgaris*), and the other the Persian (*S. persica*), seeing they are both natives of Persia. The so-called common one was brought to this country rather more than 300 years ago, and the Persian about forty years later.

The Gueldres Rose, sometimes called the Snowball Tree (*Viburnum Opulus*), and the Snowberry Tree (*Symphoricarpos racemosus*), both do well. The latter is a native of North America, the former of this country, and they both belong to the Woodbine family. The Dogwood (*Cornus sanguinea*) also flourishes. This plant is common in hedges and waste places in this country, also throughout Europe and North Africa. It is well known by its pretty smooth red branches and black berries. It received the name of Dogwood and Hound's Tree from the circumstance of a decoction of its bark having been used for washing mangy dogs. The Ribes or Flowering Currant, as it is usually called, answers fairly well.

Our old friend the common Elder of course grows vigorously. I wonder where it would not grow. There is one now growing in Chapel Yard, Hull. Once upon a time, those in authority connected with the chapel caused a large tree to be cut down below the surface of the ground, which was asphalted. The following spring growth from the stump lifted the asphalt, cast the fragments aside and proceeded quite comfortably to attain the former proportions. This process has been repeated from time to time for years, but still the Elder struggles on, although in a weakened condition. Good old Elder! The golden variety also grows well; but its leaves do not become nearly so yellow as when grown in purer air.

Roses do not flower at all satisfactorily, and in many parts they refuse to grow. The same may be said of nearly all Coniferous plants except *Thuia aurea*. This grows the best of any with which I am acquainted, but should not be planted in densely populated districts.

The Fig, which is so well known to gardeners, grows well in towns, especially when fastened to a wall. The Fig is believed to be a native of Western Asia, and was in early times introduced to the islands and countries on both sides of the Mediterranean and Southern Europe, where it has become indigenous. The Fig is so nearly the same in structure as our common Nettle that some botanists consider it belongs to the same tribe, for the following reasons. The Fig has leaves covered with very stiff short hairs, and with a pair of stipules at the base; so has a Nettle. It has flowers with stamens and pistils separated; so has a Nettle. Its flowers have no corolla, and the pistil is a little simple body which changes when ripe to a very small flat grain, all which are exactly what are found in the Nettle. In the essential parts of their structure the two parts are alike. There is, however, one important difference. The juice of the Nettle is watery, that of the Fig is milky. But someone may possibly say, Where are the flowers of the Fig? Cut a young Fig open and you will find the whole of the inside bristling with sterile and fertile flowers; the former have five stamens, and the latter a jagged calyx with a small white pistil sticking up in the midst of it.

Both the Greater and Lesser Periwinkle, *Vinca major* and *V. minor*, as they are called, prosper. There is nothing very particular to say about these glossy leaved creeping evergreens, which belong to the Dogbane family *Apocynaceae*. The Italians call this plant the Death Flower or Death's Violet. Some think it might have been intended for Sir William Fraser's death flower, when he was led to execution with a garland of Periwinkle, in mockery, placed upon his head. Sir William was the last destroyed of Wallace's adherents.

The *Aucuba japonica* has for some time been known as a good town shrub. Hollies and Laurels do not flourish in the district, and in very smoky places will not grow at all. The common yellow Broom grows and flowers fairly well for a time. The best way to succeed with it is, either sow seed or plant a few seedlings every year, so as to replace the four or five-year-old plants, which generally fail. *Euonymus japonicus* is rather tender, but when favoured by the shelter of a wall makes a charming shrub. Its glossy, dark green leaves, vigorous growth, and really handsome appearance will well repay anyone for the care bestowed upon it. The small English and the so-called large Irish Ivies are both useful; the latter as being far the more vigorous, soon covers the ground with a carpet of green, or a wall in the same way. It may also be trained in a pyramidal form, resembling a shrub when planted out, and is equally useful and ornamental, too, if grown in a large pot, tub, or box.

The king of all town shrubs is, I think, the Oval-leaved Privet. Given a fair amount of light, it will grow almost anywhere, either planted out or grown in tubs. It bears cutting well, even to the dimensions of a hedge, or a rounded shrub, and if left alone it will grow to the size of a small tree, but in this state it has a rather loose appearance. However, grown as a shrub, 6 or 8 feet high, it stands, in Hull, without a rival, and cannot be too strongly recommended, or too widely grown in towns. —A. E. PEAKE.—(Read at a meeting of the Hesse Gardeners' Mutual Improvement Society.)

(To be concluded.)

THE GEOGRAPHICAL DISTRIBUTION OF PLANTS IN RELATION TO WATERING.

How often do we hear and read that plants should not be watered until dry? This phrase has apparently different meanings with different individuals, as some go to one extreme and some to the other. Frequently we see plants in an unhealthy state, not because the temperature, ventilation, and soil are wrong, but because the watering is done in a rule of thumb manner instead of being based on scientific principles; and I am of opinion that if the rainfall of the quarter of the globe from which the plants were brought were imitated more generally, better plants and fewer failures would be known. And I propose in these notes to point out the broad principles of my text. As the capacity of the air for moisture increases with the temperature, it must follow, other things being favourable, that the amount of rainfall is greater in warm than in cold latitudes, and greater also in low-lying than in elevated districts. The amount of rainfall is greatest within the tropics, and decreases as we advance into higher latitudes. It is also greater at the sea level and moderate elevations than it is on lofty tablelands and mountains. In like manner more rain descends near the coast than in the central regions of a country. The ocean is the great source whence the atmosphere absorbs its aqueous vapours, which are eventually condensed in the form of rain.

The rainfall of the globe may be arranged under three great heads—the periodical of the tropics, the variable of the higher latitudes, and the abnormal of certain regions. The rainy season within the tropics is regulated by the monsoons, or periodical winds which blow in one direction for one half of the year, and in the contrary direction the other half. Beyond the tropics the rains no longer occur at stated periods, but become variable—that is, are distributed throughout the year in a very irregular manner. The mean annual rainfall of tropical countries is 200 inches, whilst the average annual rainfall of Britain is 36 inches.

Botanists have divided the globe into zones of vegetation. On each side of the equator, up to the tenth degree north latitude and the tenth degree south latitude, is the tropical region, within which there are two rainy and two dry seasons each year—a long rainy season of three or four months, and a short rainy season of about six weeks. Outside this zone, and extending to the thirtieth parallel of latitude, is the sub-tropical zone, in which the year is divided into a rainy and dry season, extending to six months of rains and six months of drought. This region is under the influence of the periodical winds or monsoons.

Before dealing with the average rainfall of different countries, it will perhaps be advisable to say that Palms are invariably found growing near rivers, watercourses, or on the seashore. Bamboos are mostly found in swampy places; *Nepenthes* inhabit swamps, as do *Utricularias* and *Sarracenias*. Orchids, whether terrestrial or epiphytal, are found mostly at elevations on the mountains of from 4000 to 6000 feet. Other epiphytal plants are *Eschynanthus*, *Pothos*, and most *Bromeliads*, and these should have a very free drainage to remove all surplus water.

India or the East Indies has its year divided into a very marked rainy and dry season, and plants from the plains or at moderate elevations require a long period of rest. On the west coast of India in the plains the average annual rainfall is from 78 to 100 inches, and at certain elevations on the mountains over 250 inches. The Neilgherry Hills have a temperate climate and moderate rainfall. The beautiful *Lilium neilgherrense* is found there. The rainfall of the Himalaya Mountains in Nepal and Sikkim at moderate elevations is 200 inches. The Khaysia Mountains have the largest annual rainfall on the globe; the average is from 500 to 600 feet, and as much as 30 inches has been registered in one day. This unparalleled amount is attributed to the abruptness of their slope, which faces the Bay of Bengal, from which they are divided by 200 miles of jheels and sunderbunds (being the deltas of the Ganges and Burrampooter). These mountains, from their insular position, are perennially humid.

The plants of the Indian plains include *Aristolochias*, *Beaumontia grandiflora*, *Cycas circinalis*, *Eranthemum pulchellum*, *Ficus elastica*, *Ipomoea Horsfalliae*, *Gloriosa superba*, *Hibiscus sinensis* and varieties,

Hoya bella, and some Ixoras, Jasminum Sambac fl.-pl., J. gracillimum, Plumbago rosea, Tabernæmontana coronaria, Linum trigynum, and Hedychiums. On the Sikkim Himalayas, at elevations of from 8000 to 14,000 feet, the Himalayan Rhododendrons are found as great trees. A cool temperature and great humidity of atmosphere is the requirements of this genus. This saturated state of the atmosphere in Sikkim is caused by the monsoon, which blows steadily from the ocean from May to October, and there is a current from the Gangetic delta during the remaining portion of the year.

The flora of the Khaysia Mountains is the richest in Asia, and includes Orchids, Palms, Bamboos, Balsams, and Scitamineæ. Amongst the Orchids are Vanda cœrulea, Dendrobium Farmeri, D. Dalhousianum, D. Devonianum, Cœlogyne cristata, Crypripedium insigne, Cymbidium eburneum, and Pleiones. Luculia gratissima is found in the valleys of Nepal below 5000 feet.

Taking into account the abnormal rainfall of the Khaysia Mountains, all plants from there should have water throughout the year and copious supplies during summer. Those from moderate elevations on the Neilgherry Hills and on the Himalayas below 6000 feet should have a period of rest extending over three or four months. The rainfall of Ceylon is from 60 to 80 inches, which falls during six months of the year, the remaining portion being dry. Cochin China has no distinct rainy or dry season, and the hygrometric readings are always high. Gardenias, Ixora coccinea, Clerodendron fragrans fl.-pl., Cycas revoluta, Musas, and some Nepenthes occur here. The Malay Peninsula has an average of 190 rainy days spread throughout the year, and an average of 100 to 130 inches of rain. Cyripedium barbatum is found on Mount Ophir. Burmah, on its coast, and the mountain slopes of Moulmein, have a rainy and dry season; the annual rainfall is 200 inches. Cyripedium villosum, Dendrobium formosum giganteum, D. infundibulum, D. Picardi, and Thunia Bensoniæ are found on the mountains of Moulmein.

Borneo has no marked rainy or dry periods. There is no day in which it rains incessantly, and no day in which there is not a shower. In Borneo are many fine Nepenthes. All tropical fruits luxuriate; Pines, Mangosteens, Guavas, Tamarinds, Pomegranates, and Musas. Hoya Imperialis is found here. Of Java the annual rainfall is 78 inches, and nearly one-half of this falls during the three months of December, January, and February; the remainder is distributed throughout the other portion of the year. Phalaenopsis amabilis, P. Schilleriana, and many Aeschynanthus are epiphytal on trees; whilst on the mountains, at elevations of 3000 feet, the original species from whence have sprung the Javanicum hybrid Rhododendrons are found. The Philippine Isles have their year divided into a rainy and dry season. The rainy season extends over 113 days, or four months; the average fall is 66 inches. Medinilla magnifica and Nepenthes Rafflesiana are natives of these islands.—F. STREET.

(To be concluded.)

LOROPETALUM CHINENSE.

THOUGH this early-flowering shrub has been in cultivation in this country for many years, it does not appear to be generally known or grown. It is very seldom one meets with it in gardens, notwithstanding the fact that it is very charming and distinct from other shrubs that are grown in similar positions. Messrs. J. Veitch & Sons, Ltd., the introducers of the plant, have shown it at the Drill Hall several times during the spring months, and it has always been much admired. *L. chinense* (fig. 59), possesses the merit of being quite hardy, and growing to a height of about 3 or 4 feet, produces its narrow petalled white flowers with the greatest profusion. It is a shrub to which more attention should be accorded, as it is very ornamental, and almost certain of extensive appreciation.



FIG. 59.—LOROPETALUM CHINENSE.

together with the prompt and satisfactory manner in which the claims were assessed and paid, have resulted in the operations of this Corporation becoming much better known and appreciated.

The directors are also pleased to draw attention to the fact that though the Corporation had only been established so short a time, the whole of the claims were paid without any further call on the shareholders being made.

Every possible effort has been made to inform the public of the special advantages and reduced premiums offered by this company, and the directors are gratified to be able to announce that the premium income this year is more than 50 per cent. over that of the preceding year.

The directors again desire to draw attention to the special advantage of insuring with this Corporation,—viz., that those insured can replace immediately their own glass broken by hail, the Corporation paying them at the rate per square foot at which the glass is insured. Another special advantage, and of which several insurers are availing themselves, is that of being able to cover wholly or partially the value of the contents of their glass houses by increased insurance of their glass—an advantage offered by no other insurance company.

Twenty-nine additional agents have been appointed during the year, making 101 in all—viz., ninety-five in the United Kingdom; five in the Channel Islands; and one in the Scilly Isles. All agents are paid by commission only. The directors invite applications from gentlemen who would undertake agencies in those districts not yet represented.

The Board of Directors meets not less than once in every three months, whilst a Committee of six of the Board meet as often as may be necessary to carry on the business of the Corporation. The total number of meetings held during the year has been twelve.

In accordance with clause 92 of the articles of association, no directors' fees have been paid.

[It appears from the financial statement that claims to the value of upwards of £1500 have been paid during the year.]

THE NURSERYMEN, MARKET GARDENERS' AND GENERAL HAILSTORM INSURANCE CORPORATION, LTD.

REPORT to be presented to the shareholders at the third ordinary general meeting to be held at Simpsons' Ltd., 101, Strand, London, W.C., on Thursday, the 31st day of March, 1898, at 3 o'clock, P.M.

The directors, in submitting to the shareholders their third annual report on the business of the Corporation for the year ending 23rd February, 1898, together with the audited accounts, have to state that no alteration in the amount of capital issued has taken place during the past year.

HAILSTORMS.—The hailstorms which occurred during the year 1897 will long be remembered for their extreme violence, for the large area over which they fell, and for the devastation and ruin which they wrought, more than eighty nurseries being very seriously damaged. On the 16th April, 1897, severe storms caused considerable damage to glass and crops at Luton, Dunstable, and Bedford, as well as in Lincolnshire, Cambridgeshire, and North Herts. On the 24th June, 1897, hailstorms of unprecedented violence occurred simultaneously in Essex, Hertfordshire, and Middlesex, the results being most disastrous at Chelmsford, Ingatestone, Ponder's End, Enfield Highway, Waltham Cross, Enfield, New Barnet, Heston, near Hounslow, and Harrow. The glass houses at over sixty nurseries were wrecked by these storms, and crops in several localities were completely destroyed. Many of the nurserymen, market

LONDON'S OPEN SPACES.

V.—HACKNEY MARSHES AND FINSBURY PARK.

OF northern and north-eastern open spaces, the largest, if in some senses the least beautiful, is Hackney Marshes, with its 335 acres of ditch-divided land. Subject to periodical inundations from the river Lea in the old days it was much frequented by fowling and hawking parties. In relation to this latter sport a curious story is told. In September, 1792, a hawk was caught at the Cape of Good Hope, and brought from there by an English vessel. The bird had on its neck a gold collar on which was engraved: "This goodlie hawke doth belong to his Most Excellent Majestie, James Kinge of England, A.D. 1610." The discovery created much discussion at the time, and it was recorded as a curious instance of the longevity and flying powers of the hawk, since the bird was believed to be one that "on the Lea marshes mounted so high with his game that both hawk and heron got out of sight and were never seen more. Inquiry was made, not only all over England, but in all the foreign princes' courts in Europe, the hawk having the king's jesses and marks sufficient whereby it might be known; but all inquiries proved insufficient." That the kings of England had long looked upon the Lea or Hackney Marshes as good sporting ground is shown also by an entry in the account of the Comptroller of the Wardrobe of King Edward I., 1299, "Paid to Will de Foxhunte for the keep of twelve hunds belonging to the king for his use on the Lee marshes, each dog per day a halfpenny—£9 3s."

The Marshes have also been the scenes of war and warlike preparations. It was here the Duke of Gloucester and his party appeared in arms in the reign of Richard II., and remained encamped while they sent John, Lord Lovel, with the Archbishop of York and others, to the king. It was during this sojourn on these then sodden and miasmatic flats that the duke contracted the ague, which, according to historians, so worried him. In the reign of Charles II. Hackney Marshes figured in a notable attempt to improve the ordnance of the time inaugurated by Prince Rupert. That fiery Royalist leader set up a water-mill, that gave him sufficient power to bore guns by a new method he had discovered, but the secret died with him, and the mill fell into ruins, which were still in existence at the beginning of this century.

Coming nearer to the present time we find the records of Hackney Marshes a mixture of accounts of floods, sporting events, and disorderly gatherings. In 1774 the remains of a great causeway of stone were discovered, with many Roman coins and pieces of pottery. It was probably one of the many great Roman highways, but though of intense interest to antiquarians the mob saw nothing in it but an excellent opportunity to make a little money, the stones being carted away and sold by the load, and the whole relic completely demolished. A good specimen of the sporting gatherings is afforded by one which took place on Thursday, August 13th, 1737, when a horse race was run, or rather swam, from Tyler's ferry to the bridge in Hackney Marsh, the competitors being two well-known sportsmen, and the first horse winning by two lengths. It is estimated by a writer of the time that 8000 persons gathered to see this contest. There is also the significant sentence that "upwards of 300 robberies were notified to the authorities as having taken place on that day." Hackney Marshes were also notorious for bull-baitings and prize fights.

Formerly Hackney Marshes were flooded to an extent unknown in late years, "St. James's Chronicle," of January 19th, 1841, describing a great flood of that year as being "like the sea," boats that ventured on it being upset, and many narrow escapes from drowning taking place. These things have all been bettered, the Marsh is properly drained, clumps of trees adorn it here and there, disorder is suppressed, the sports are cricket and football, and in the great stretch of land with its many quaint memories the County Council hold for the people one of the most valuable of our metropolitan "lungs."

Finsbury Park is another of London's great northern spaces, though why it should be called "Finsbury" nobody seems to know. It is a triangular space of land some 120 acres in extent, lying some miles from Finsbury proper, Islington, Hoxton, and Holloway intervening between it and the district after which it is named. The site was originally known as Hornsey Wood, which in 1774 was described as "a coppice of young trees, at the entrance to which is a public house to which great numbers of people resort from the City." This wood for some time shared with Chalk Farm the dubious honour of being a favourite meeting place for duellists, and at the tavern near by, "Hornsey Wood House," Mr. Reay and Mr. Lambton, two City magnates, drank coffee before they fought and killed each other. The tavern, which lay just beyond the "Sluice House," so celebrated for its eel pies in the last generation, became very popular. The grounds were laid out as tea gardens and a lake formed, the water being supplied by the New River, which runs near by. For a long time the grounds were devoted to pigeon shooting matches, but eventually the patrons of the sport found Hurlingham and the "Welsh Harp" more convenient, and "Hornsey Wood" was deserted by them. The spot was a favourite resort of the poet Crabbe when in London, and on one occasion, too tired to walk back to town, and not having sufficient money on him to pay for a lodging, he lay down on some hay in the coppice and passed the night there.

The Park, which is well laid out with ornamental walks and flower beds, was acquired by the Metropolitan Board of Works in 1866, at a cost of £142 per acre. It was opened by Sir T. Thwaites in 1869, and is now, under the control of the County Council, one of North London's most charming and popular resorts.

Another most important open space in North London is Clissold Park, a beautiful pleasure ground 53 acres in extent. It was purchased for

the public in 1887 by the Metropolitan Board of Works, the Charity Commissioners, and the local vestries, at a total cost of £86,000. Since it has been in the hands of the County Council it has been much improved, its flower beds being one of the sights of the district. The spot has no particular history, legend according it only the somewhat gruesome fame of being the place—or very near it—where the first gibbet was erected in England.—("Lloyd's News.")

SPRING SHOWS.

TORQUAY.—MARCH 23RD.

THE show held at Torquay adds yet another to the great successes which the local Gardeners' Association has achieved in this direction. The class for groups of miscellaneous plants was well filled, Mr. W. Satterby, gardener to Mrs. Rawson, taking first honours with a most attractive exhibit. Mr. W. H. Minifie, gardener to Mrs. Hassall, was a close second; Mr. C. R. Prowse, gardener to Dr. W. Ford Edgelow, and Mr. R. W. Hodder, gardener to Mrs. Trevor Barkley, being respectively third and fourth with displays very little behind the first in point of merit.

The Orchids shown by Mr. G. Lee, gardener to Miss Lavers, and the miscellaneous stand exhibited by Mr. W. Bale, gardener to J. Snelgrove, Esq., formed great attractions, as did the trade exhibits. Of these Messrs. R. Veitch & Sons, Exeter, contributed a large portion. The Committee had a specially constructed basin and fountains in the centre of the hall, and Mr. F. W. Meyer, of the above firm, had laid it out in the form of an artificial lake some 30 feet across. With the fountains playing and the whole illuminated with a unique arrangement of electric lights, as it was in the evening, a most charming effect was obtained, and great was the admiration expressed by the crowds of visitors. The other nurserymen exhibiting were Messrs. W. Allward, W. Burridge & Sons, Curtis, Sanford & Co., the South Devon Fruit Farm, Beachey & Co., and W. B. Smale, who showed a choice selection of Azaleas and Rhododendrons.

The table decorations were extremely good, Mr. F. Peacock, gardener to P. W. Bushby, Esq., being first with a light and tasteful arrangement of *Narcissus poeticus* and *Roses* W. Allen Richardson. Mr. J. Davis, gardener to Lady Macgregor, was a close second, with a lovely arrangement of Daffodils. The Cyclamens shown by Mr. R. W. Hodder were also noteworthy. The Corporation exhibited a stand of flowers from the open air, and Mr. C. H. Gerry some well grown Cinerarias. The arrangements were carried out by a hard-working Committee of gardeners, aided by Dr. R. Hamilton Ramsay (President), Mr. W. A. Masterman, and Mr. W. B. Smale, J.P. (Vice-Presidents), and Mr. Fred. C. Smale (Hon. Sec.). These all worked hard to secure success, which object was certainly attained, the attendance being extremely good throughout the day.

BRIGHTON AND SUSSEX.—MARCH 29TH AND 30TH.

THIS show was a decided improvement upon that of last year. Not because there were better exhibits, but on account of greater number and a good all-round competition. Mr. J. Hill, gardener to C. Wallis, Esq., Springfield, Withdeane, had a well-arranged group, which proved what a good effect can be gained by the simplest and easiest flowers and plants to grow. Mr. G. Miles, Dyke Road Nursery, followed very closely. Tables of plants were good, Mr. G. Miles being ahead, and having some exceptionally high-coloured *Begonia Gloire de Lorraine*. Mr. Bonson Lister, gardener to E. A. Wallis, Esq., ran this exhibit very close. Mr. Harper, gardener to E. A. Tucker, Esq., Vernon Place, Preston, was first for a collection of Orchids, *Lycaste Skinneri splendens*, *Sophronites coccinea* (very bright), and *Laelia harpophylla* being the best. Mr. H. Garnett, gardener to R. G. Fletcher, Esq., Mount Harry, Preston, also had an excellent stand.

One of the most pleasing exhibits was a class for a mantelpiece and hearth arranged with plants. In this instance, mirrors, and fire-places, were set in between screens, and the whole tastefully decorated by the Society. What good use can be made of our common Primrose was amply shown here by Mr. G. Miles, Dyke Road Nursery, who was ahead with a charmingly simple arrangement. Mr. E. Meachen, gardener to Mrs. Armstrong, Woodslee, Preston, followed very closely. Hyacinths and Tulips were good; Mr. J. House, gardener to Sir F. Mowatt, K.C.B., Withdeane Hall, winning for twelve Hyacinths, and Mr. E. Anderson, gardener to B. Parish, Esq., Preston Park Avenue, for a like number of Tulips. We have not seen Lily of the Valley so numerous here for many years, and they were exceptionally good; Mr. A. E. Golding, gardener to H. St. George Voules, Esq., Dyke Road, was only just ahead of Messrs. W. Miles & Co., Hove.

Lachenalias were largely shown, but all were the old *L. tricolor*. The pots from Mr. J. Turner, gardener to Sir Greville Smythe, Wick Hall, and Mr. J. Hill, gardener to C. Wallis, Esq., Withdeane, would have been hard to beat; so also would the grand pots of Mignonette from Mr. W. E. Anderson, gardener to B. Parish, Esq., Preston Park. Freesias, Violets, Primulas, Cinerarias, and Hydrangeas were good. The Spiræas were beyond the average, the twelve best pots coming from Mr. G. House, gardener to Sir F. Mowatt, K.C.B. Cyclamens were also very good, Mr. C. Murrell, gardener to Mrs. Jenkins, Burgess Hill, having a grand dozen. It was the same in a class for twelve Genista fragrans, the best coming from Mr. H. Head, The Drive Nursery, Brighton. There were some grand *Amaryllis* from Mr. G. House, some of the best we have seen. *Mollis Azaleas* from Messrs. W. Miles and Co., Hove, were also most noticeable, as were the six *Callas* from Mr. E. Anderson.

For twelve bunches of *Narcissus* there was strong and close competition, Mr. J. Harper, gardener to E. A. Tucker, Esq., Preston, winning with some very clean flowers, closely followed by Mr. M. Tourle and Mr. J. Hopkins. Some really good greenhouse and stove cut flowers came from Mr. H. Garnett, gardener to R. G. Fletcher, Esq. There were six boxes of twelve cut Roses, that from Mr. G. W. Piper, The Nurseries, Uckfield, being far in advance, and containing The Bride, Bridesmaid, Maman Cochet, Madame Willermoz, Jean Ducher, and Souvenir d'Elise Vardon as the best six. Mr. G. Miles, Dyke Road Nursery, followed. A stand of natural flowers for the dinner table was closely contested, Mr. E. Meachen just beating Mr. M. Tourle, The Gardens, Little Horsted. Groups of plants in the amateurs' section were good, first being awarded to J. R. Cattle, Esq., Dyke Road.

The most notable non-competitive exhibits, among a large number, were *Azaleas*, *Ericas*, and *Boronia megastigma* from Messrs. Balchin and Sons; a number of cut Roses from Mr. G. W. Piper, Uckfield (who had good examples of his new Tea Rose Sunrise; excellent fruit from Messrs. Cheal & Sons, Crawley; Ferns from Mr. W. Goodcliffe, Worthing; and hardwooded plants from Messrs. Cutbush & Sons, Highgate.

SOUTHAMPTON.—MARCH 29TH AND 30TH.

In the Victoria Hall, the Royal Southampton Horticultural Society held its spring show. We trust it will prove as successful financially as it was horticulturally, as the Society is sadly in need of funds to enable it to carry out its programme during the present year. The classes, though not numerous, were thoroughly representative of exhibits for the time of the year.

The centre of attraction was the group of Orchids arranged with Ferns and foliage plants, and which were effectively displayed in front of the orchestra. Mr. E. Carr, gardener to W. A. Gillett, Esq., Fair Oak Park, Bishopstoke, was an easy winner of the premier award with well-flowered plants. Mr. A. Pragnell, gardener to Captain Shaw Storey, Elm Lodge, Bursledon, was a creditable second. Mr. Carr also won the chief award for a miscellaneous collection of plants arranged for effect. Mr. W. Peel, gardener to Miss Todd, Sidford Lodge, Shirley, was second, and Mr. Wills, florist, Southampton, third.

Azaleas were a feature of the show, so well were they staged. Mr. Mitchell, gardener to J. Willis Fleming, Esq., Chilworth, was an easy first with well-flowered examples. *Deutzias* made a good display; the first prize plants of *gracilis* from Mr. Mitchell were excellent specimens. Mr. Wills had the best *Spiræas*, while Mr. C. Horsey, gardener to J. C. E. D'Esterre, Esq., Elm Field, Millbrook, staged the finest *Cinerarias*. Mr. Wills won premier award for twelve *Hyacinths*, with well grown dwarf specimens of popular varieties. Specimen stove and greenhouse plants were staged by three exhibitors in fairly good condition, Mr. Peel winning for eight.

Prizes were offered for the best decorated epergne. Three entered, making an interesting display. Mr. Carr, with capital Orchids effectively arranged with suitable greenery, easily won premier award. Mr. Peel second. Miss Wadmore, Basingstoke, in the class for one basket of cut flowers, open to ladies only, made a pleasing exhibit, and was awarded the first prize. Miscellaneous exhibits from Mr. B. Ladhams, florist, Shirley; Mr. E. Wills, Mr. Longster, Messrs. Brightman & Andrews, not for competition, were very interesting.

ROYAL BOTANIC.—MARCH 30TH.

The corridor at Regent's Park was capitably filled on the occasion of this the spring show of the Society, and the exhibits were finely diversified. As has become customary during the past few years, the competitive classes were practically nil, and if it were not for the miscellaneous exhibits the shows would certainly be a failure. It is regrettable that more exhibitors do not come, as it would bring back to mind the Botanic Shows of some years ago. The few exhibits that were staged in the competitive classes were of no special merit, and need not be particularised.

Messrs. B. S. Williams & Son, Upper Holloway, sent a collection of plants, mostly comprising *Azalea mollis*, *Clivias*, and *Amaryllis* in good variety, with some charming Orchids. Miscellaneous plants formed the exhibit arranged by Messrs. J. Laing & Sons, Forest Hill. There were *Clivias*, *Azaleas*, *Callas*, *Acacias*, Ferns, Palms, *Caladiums*, *Cytisus*, with several others. Messrs. J. Peed & Sons, Upper Norwood, arranged a bright group of flowering and foliage plants, as did Mr. G. Kelf, gardener to Mrs. Abbot, South Villas, Regents Park. *Hyacinths* and *Tulips* were conspicuous in the latter stand. Messrs. W. Cutbush & Son, Highgate, sent yellow *Callas*, *Oranges*, *Acacias*, *Ericas*, and others in good condition and great variety.

Messrs. J. Hill & Son, Edmonton, staged Ferns, and Mr. W. Kemp, Barnes, *Mollis Azaleas*. Mr. H. B. May showed a few Ferns, and Mr. W. Rumsey, Waltham Cross, some charming Roses in variety. Mr. W. Grant, Newport, Mon., was represented by a collection of *Narcissi*, amongst which were observed some good flowers of well-known varieties. Messrs. B. S. Williams sent floral devices of Roses, Lilies, Daffodils, and others. Messrs. J. Laing & Sons were represented by floral arrangements, some of which exhibited good taste, while others were rather too stiff. Messrs. Moule & Co., Finchley Road, sent *Azalea mollis* and splendidly grown *Mignonette*; while Messrs. J. Carter & Co., Holborn, staged *Cinerarias*, as did Messrs. A. W. Young & Co., Stevenage.

Messrs. H. Low & Co., Enfield, sent an interesting group of Orchids; and Mr. T. Jannoch, Dersingham, finely flowered Lily of the Valley. A handsome collection of Daffodils was staged by Messrs. Barr & Son, Covent Garden, the varieties being mainly represented by masses of

considerable size. The flowers were of good substance and colour. The St. George's Nursery Co., Hanwell, staged well-grown *Cyclamens*; and Messrs. W. Paul & Son, Waltham Cross, some grand *Hyacinths*. All the best known varieties were represented, as well as some of the newer ones. The same firm also sent a number of Roses in pots. The plants were carrying good flowers. Messrs. Paul & Son staged *Camellias*, both in pots and in a cut state, the flowers all being of the best quality. Mr. T. S. Ware, Tottenham, staged excellent Daffodils and alpine plants in variety.

THE YOUNG GARDENERS' DOMAIN.

POTATOES FOR EARLY WORK.

In most private gardens where early vegetables are required Potatoes are forced either in pots or heated pits. If the former plan be adopted good results may be had by the following method. About the 1st of January place the tubers singly in 8-inch pots (using those about the size of small hen's eggs for seed) in a compost of loam, leaf soil, horse manure, and old potting soil in about equal parts, with one good crock and a handful of horse manure for drainage. About half fill the pots with compost and put in the tubers, just covering them with soil; stand the pots in a vinery that has just been started, where they will soon commence strong growth. When the growth is a little higher than the pots the plants should have a top-dressing of the same compost, filling the pots to within about 2 inches of the rims. Care must be taken not to give too much water at first, but a plentiful supply will be needed as they advance in growth. When they have abundance of haulm liquid manure should be given occasionally, and a good crop may be had by the 1st of March. Among the best sorts for forcing are Sutton's Matchless and Myatt's Ashleaf.—W. W.

IPOMŒA RUBRO-CŒRULEA.

Ipomœa rubro-cœrulea is an annual climber belonging to the large and varied order of *Convolvulaceæ*. It is specially adapted for training on the pillars or trellises in the stove, or in a house of a temperature of not less than 60° at night. In such a structure it will produce an almost endless number of bright electric blue flowers, which are very effective arranged with *Adiantum cuneatum* for table decoration. The flowers only last twenty-four hours; but that is quite compensated by the number one plant produces. I have seen as many as 600 flowers expanded at one time on fourteen plants.

This plant is exceedingly easy of culture, and it is a great pity it is not more universally grown, as it does not need one-half the attention the evergreen species do, while at the same time it is freer flowering. To obtain flowers from the beginning of November till the middle of February the seeds should be sown in the month of June in small 60-pots, giving them two shifts into 24's. The soil best suited for them is a mixture of light loam, peat, and leaf soil in about equal proportions, with a sprinkling of silver sand. Care should be taken with them, as with all plants, in the matter of watering, not to go to excess either way. Too much stimulant should not be given, as it causes the foliage to fall or become discoloured, which is regrettable, as the natural colour of the foliage greatly adds to the beauty of the plants.—S. S., *Lockinge Park*.

THE ALTERNANTHERA.

The several varieties of this charming Brazilian plant are so extensively used for carpet bedding that it has become almost indispensable in the flower garden. Moreover, the requirements to insure its successful cultivation are so simple that a large number may easily be raised from a few stock plants. These should be wintered in a warm and airy position near to the glass, and before growth commences in February the plants must be carefully examined for any signs of spider or thrips, which often prove troublesome. An application of some insecticide will save much work later, and I have found that a mixture of softsoap and flowers of sulphur, made soluble, either for syringing or dipping the plants, is the most useful. Syringing on bright days materially assists growth.

By the first week in March cuttings may be taken, and where frames on hotbeds are at command the best way is to insert direct into them, but they do well if pricked into pans or boxes of sandy soil, placed on a hotbed of leaves. Maintain a warm temperature, and shade from bright sun for a few days to prevent flagging. When they are well rooted, however, allow all the light and sunshine possible to develop colour in the leaves. Gradually harden by allowing air and removing into cold frames, taking care to guard against sudden changes, or a check will result, which leaves its mark for a long time.

Of the varieties used for carpeting, perhaps *A. paronychioides* stands foremost, being a free grower, beautifully marked with orange and green. *A. p. major*, and *major aurea* keep a good colour throughout the season. *A. amabilis* and *A. a. amœna* are also very effective in the panels of beds, and form a fine mass of colour. *A. versicolor* is stronger and of more upright habit, rather difficult to retain in some soils. Curiously enough it is easily propagated in the spring, but almost refuses to root later in the season for stock. This difficulty, however, is surmounted by taking up a few plants from the beds and making cuttings with roots attached, or better still, by keeping some growing in pots all the season, and cutting over occasionally to keep them bushy. A few of the highly coloured varieties may be grown in 3 or 4-inch pots, the leading growths pinched back to encourage a compact habit, and used for house or table decoration where dwarf specimens are required.

There is a small thrips, almost invisible, which will devastate a houseful of young plants in a very short time, coming upon the foliage and causing

it to drop off or curl, thereby mutilating the plants. On its first appearance commence a vigorous attack. Fumigation does not disturb its equanimity much; tobacco water, quassia, and other things seem to agree with its constitution, but softsoap bothers it and has the desired effect. If any young gardener recognise the insect, and would state his experiences in combating it, in the pages of the "Domain," many others besides myself would be interested.—R. A. ANDERSON, *Alnwick*.

YOUNG GARDENERS' PREMIUMS.

It seems to me that the subject of premiums is less discussed than almost any pertaining to gardening. Why is this so? Is it because the older gardeners think there is no need for reform, or are the young gardeners somewhat afraid of expressing their opinions publicly? Their opinion of the premium or the premium system, is, I suspect, far from favourable, and this is not surprising, seeing that there are plenty of excellent men in high positions who have never paid a cent for learning.

Some gardeners there are (and I trust many) who take a youth, and from pure love of the work, give him a training in the craft, in the hope that some day he may attain a creditable position. On the other hand, there are men who enter into an agreement to teach a youth gardening in consideration of a fee for doing so; and the youth (or his parents) naturally thinking this will insure his advancement, the fee is paid. Still, how often does it happen on the expiry of the term that a youth finds himself no forwarder than his companions in other places who have paid nothing.

But does the gardener teach him? As a rule does not the teaching fall on the foreman who gets no recompense for it? I have not as yet met a single foreman who was in favour of premiums, and if they keep to that mind when they become head gardeners there is better times for apprentices in store. Many gardeners argue that the premium is a means of keeping gardeners select. That may have been the case in days gone by, but the argument is now obsolete, for there are so many men who spring from amateurs to professionals that the competition in gardening is as keen as in any other profession or vocation. Be that as it may, the premium system is a means of deterring many ardent, industrious, earnest youths from becoming gardeners.—REFORM.



FRUIT FORCING.

Cucumbers.—The bright sun has caused plants kept close during the severe weather to flag, and therefore light shading is desirable for a couple of hours at midday when the sun is powerful. Plants in bearing will need water with a little nourishing food in it once or twice a week, and the roots earthing occasionally. Old plants that have been in bearing some time should have the exhausted soil removed, not injuring the roots, adding a rich lumpy compost previously warmed. Exhausted growths should be cut out and young bearing shoots encouraged. Damp the floors and other surfaces in the morning and evening, and syringe the plants lightly on fine afternoons. Attend to stopping and regulating the growths not less frequently than once a week. To keep the plants in steady progress and secure straight, tender, crisp, well-flavoured fruit, a temperature of 65° to 70° at night, 70° to 75° by day artificially, 80° to 85° with sun, closing sufficiently early to run up to 90° or 100°, with abundance of atmospheric moisture, will be suitable. Ventilate early but moderately, avoiding sudden changes of temperature; pernicious cutting winds and currents of cold air cripple the foliage and deform the fruit.

In pits and frames the necessary heat should be maintained by renewing the linings, taking care to keep rank steam out of the frames. Train the growths rather thinly, and stop them one or two joints beyond the show for fruit. Supply fresh soil to the hillocks or ridges as the roots extend, and be careful in the application of water. Admit a little air early, so as to dry the foliage before the sun acts powerfully upon it. Keep the temperature through the day at 80° to 90° from sun, and close early in the afternoon, no harm accruing if the temperature rise to 90° to 95°, provided there is no rank steam.

Melons.—When the earliest plants are in flower and during the setting period water should only be given to prevent flagging, and the atmosphere must be kept drier, with an increase of temperature of about 5°. Fertilise the blossoms every day, pinching each growth at the same time one joint beyond the fruit. When the fruits are set and about the size of a bantam's egg give a thorough watering with tepid water or liquid manure, having the soil for earthing the roots warmed. Stop the subsequent growths to one or two leaves, and avoid overcrowding by removing superfluous growths. Maintain the bottom heat between 80° and 85°. The night temperature should be kept at 65° to 70°, 70° to 75° by day from fire heat, ventilating from that point, but allowing an advance to 85° or 90°, closing between these figures sufficiently early to run up to 90° or 100°. Syringe moderately about 3 P.M. on bright and warm afternoons, or soon after midday when the air is sharp. Damp the floor in the morning, and keep the evaporation troughs charged with liquid manure. Liquid manure will be needed by plants in restricted borders,

and a mulching of rather lumpy manure encourages roots and affords support.

Later plants will need the growths trained regularly, removing the laterals on the stem to the trellis, then rubbing off every alternate lateral directly they are perceived, leaving the rest right and left of the main stem, pinching the point out of the primary stem after it has extended two-thirds across the trellis. Increase the supply of water as the days lengthen, but avoid making the soil too wet, and secure a genial condition of the atmosphere by damping in the morning and lightly syringing on fine afternoons. Sow seeds to raise plants for occupying small houses or pits as they become cleared of bedding plants, keeping the seedlings sturdy and not allowing them to become root-bound.

Peaches and Nectarines.—*Earliest Forced Trees.*—The trees must not be hurried during the stoning process, but continue the temperature at 70° to 75° by day with sun heat, and about 65° in dull weather. Tie the shoots to the trellis as they advance, and regulate the growths for future bearing, so as not to have them too crowded. Shoots more than 14 inches long that are not required for extensions may have the points pinched out. When the stoning process is over the fruits will require regulating for the swelling period. Supply weakly trees with liquid manure, and inside borders must be kept properly watered, mulching the surface with partially decayed manure. The temperature may be increased to 65° or 70° at night, and in the day to 70° or 75°, maintaining 85° or 90° throughout the day by sun heat; ventilate from 75°, and close early with plenty of atmospheric moisture. The very early varieties will soon give indications of ripening, when syringing must cease, and the leaves that shade the fruit must be drawn aside.

Trees Started at the New Year.—The weather on the whole has been favourable to the swelling of the fruits, especially where a genial atmosphere has been maintained, and stoning is commencing. Avoid sudden checks by injudicious ventilation; cold air in the day, causing excessive evaporation, and too high a temperature at night are fatal.

Trees Started Early in February.—These have firm-textured and deeply coloured foliage when properly attended to, the set of fruit being satisfactory, and the swelling progressive. Syringing as soon as the fruit is fairly set on all the trees assists them to shed the remains of the flowers. Heavy syringing must be avoided; an occasional effective and judicious syringing is all that is needed until the foliage attains to nearly its full size in the first leaves. Maintain a night temperature of 55° to 60° in mild weather, ventilating from 65°, permitting an advance from sun heat to 70° or 75°, but with free ventilation.

Trees Started Early in March.—These are now flowering well. Provide a little ventilation constantly at the top of the house, and lose no opportunity of ventilating freely. The night temperature should be 50° in mild weather, falling 5° to 10° through the night, and in severe weather 50° to 55° by day and 65° from sun with a free circulation of air. Let there be no mistake as to the moisture of the inside border, giving a thorough supply of water when required.

THE KITCHEN GARDEN.

Asparagus.—If the beds were heavily dressed with manure, and the soil from the sides and alleys distributed over this—an old but faulty practice—the surface ought now to be lightly forked over, all stones and sticks removed, and enough of the top-dressing be raked off to cover the roots exposed when the sides were chopped down. It is a mistake to rake off all the soil and manure to the extent of nearly baring the crowns. Now is a good time to top-dress shallow beds with a mixture of fine loam, leaf soil, sand, and fine mortar rubbish. Do not disturb the soil in the alleys, as this ought to be occupied with Asparagus roots. If shallow beds are not top-dressed, the least that can be done is to hover strawy manure over them with a view to protecting the young shoots.

Manuring Asparagus.—Salt is often applied to Asparagus beds, and answers the double purpose of stimulating the growth of plants and destroying weeds. It should be used somewhat freely, or enough evenly distributed to well whiten the surface of the beds. Applied to newly formed beds, salt is liable to seriously injure the roots, and has been the cause of numerous partial or complete failures. Clayey soils are made still colder and closer when dressed with salt, and in all cases where the beds are formed with soils of a clayey nature, salt should not be applied unless, unfortunately, weeds cannot be kept down, otherwise than by its use. Guano and special manures applied as recommended by the vendors, greatly benefit Asparagus, but do not check the growth of weeds. Liquid manure, applied now, and again when cutting has ceased, acts beneficially, especially in the case of the lighter non-retentive soils.

Seakale.—Seakale that is planted permanently, and either forced or only covered with blanching material, ought not to be allowed to form stems much above the ground. After the blanched tops have been removed, cut all stems exposed down to the ground. They will break strongly, and if the shoots are freely thinned out three or four strong crowns will be the ultimate result. Where Seakale can be forced in Mushroom houses, or other heated structures, this simplifies matters, as it is less trouble than forcing permanently planted roots with manure and leaves. Single roots 2 to 3 inches in circumference for forcing can be grown in a single year from root cuttings, each when lifted and forced giving one strong growth and two or three smaller in size. All the thongs or thickened roots should be saved at lifting time, and these cut up into lengths of 5 inches, should be planted in March or early in April. If these cuttings are prepared in January or February and packed in soil or moist sand in a cool place, they form roots and buds by planting time. Seakale should be planted in a moderately rich, finely divided soil, dis-

posing the cuttings 1 foot apart in rows 18 inches asunder. The top of the cuttings ought to be sunk slightly below the surface of the ground. If permanent beds are formed with young plants from a seed bed or nursery, cut off the crowns to prevent their flowering, and plant either singly or in groups of three, disposing the stations 2 feet apart each way. A width of 4 feet of ground is not too much when a single row of Seakale for forcing where grown is formed.

Kidney Beans.—It is too early to sow seed in the open with a good prospect of a crop resulting, but as it is scarcely possible to grow too many Beans for use early in the season, a goodly number of plants should be raised for planting under hand-lights in pits, glazed or unglazed, and frames. They move best out of small pots, and form a good succession to early Potatoes, levelling over the soil and planting the Beans as each light is cleared. At this period of the year Kidney Beans succeed better in boxes than pots, suffering less from drought and red spider.

Tomatoes.—Plants intended for putting out against sunny walls or quite in the open late in May or early in June, should not have been raised yet, especially if large numbers are required. A few might be given a shift into 6-inch pots, and kept growing, not losing their first bunch of flowers, but this is out of the question on a large scale. Plants large enough for turning out into the open ground at the proper time can be had in about a month from the date of sowing the seed, and with only a warm frame or greenhouse at command six weeks is long enough to allow. Sow seeds of early ripening varieties very thinly in pans of light soil in gentle heat. Before the seedlings become drawn raise them up near to the glass, and when in rough leaf place them singly in 2½-inch pots. Grow the young plants in a sunny position.

THE BEE-KEEPER.

CONDITION OF STOCKS.

WHAT is the condition of the bees in the various districts throughout the country, and how have they wintered? are questions often asked at this season. It is gratifying to record the general good condition of stocks. They are, as a rule, more forward, and have more bees individually than is usually the case six weeks after this date. This is our experience in a fairly large home apiary, and is also the opinion of several correspondents in different parts of the country. We have not received such good reports so early in the season before. The only complaint in a few instances has been shortness of stores. This, however, can be remedied when steps are taken in time.

Where numerous colonies of bees are kept one may now easily make a comparison as to the amount of stores consumed during a mild open winter, one unusually severe, and an excessively wet season. The past winter has been exceptionally dry and mild, and our experience is that more stores have been consumed than in previous winters when the weather has been severe. Although this has been the case not a single stock has required feeding up to the present time, and to all appearances they are safe until their natural supplies come in. A wet season is to be dreaded by bee-keepers more than a severe one. Let the hive become saturated, or the floor board damp for any length of time, and the bees will suffer, if they do not actually succumb, so instead of strong colonies in early spring they will, with only a few exceptions, be weak.

DEARTH OF DEAD BEES.

A remarkable feature of the past winter is the scarcity of dead bees in the hives. Our usual practice during early spring is to place a clean dry floor board under each of the hives, as there is always a certain amount of debris to be cleared away, caused by the uncapping of their stores during the winter months. There are usually a few dead bees, sometimes more than others. We have always found them to be more numerous when there has been dampness in the hive than from any other cause. But lately, when removing the floor boards from our hives no dead bees were seen. This can only be accounted for by the mild dry winter, the old bees, which under ordinary circumstances would have died, having had their lives prolonged. They will be an advantage in helping to keep up the temperature of the brood nest. In no instance this spring have we observed any dead bees turned out of the hives, neither has there been any seen in the vicinity of the apiary.

So, taking all things into consideration, the outlook is encouraging to bee-keepers, and should the much needed rainfall come in due course, and warm weather and bright sunshine when the honey flow comes, it will give a stimulus to bee-keeping.

QUEENLESSNESS.

Why are there more stocks queenless at this date, or during early spring, than at any other time of the year? That such is the case few bee-keepers will deny. How often one hears the complaint from the straw skepist, it may be in February or as late as May, that "sundry skeps of bees are dead; there were plenty of stores still in the hive, but the few bees that remained in the skep were found dead

on the floor board." We have received a query similar to the above, and have no hesitation in saying that in nine cases out of ten it is caused by queenlessness. This is oftener observed when care is not taken in making a note of swarms casts or old stocks, as the case may be, when driving the bees in the autumn. The mistake many cottagers make is to keep their heaviest hive for stock. This is invariably the first swarm which is headed by the old queen from the parent stock. When this is done it must end in disaster sooner or later.

But queenlessness at this season is not confined to the straw skep; it will often happen in the modern frame hive. Old age and raising queens late in the autumn are the most frequent cause. Unless there is some particular reason, a queen should never be kept longer than two years. When a queen has become decrepit and worn out from old age they will often live throughout the winter, and then, owing to their ovipositing powers being on the wane, the workers will ball them and turn them out of the hives. If in early spring they will form queen cells; but if a queen should be hatched she will not become fecundated, and the bees will gradually dwindle away. But if the weather is warm they will often leave the hive in a body, and join the bees in another.

An old queen will often die at midwinter; the bees left in the hive then appear to die at a rapid rate, and the fact may not be discovered for several weeks. But when it takes place during the spring the bees should be united to the nearest colony, as advised in previous notes. It is quite easy for a practical bee-keeper to form a reliable opinion as to whether a stock is headed by a good fertile queen or not. If it is, observe them when the sun is shining brightly, and all will be activity; the bees will be carrying in pollen at a rapid rate. If queenless, the bees will remain about the entrance in a languid kind of manner. When this is observed the stock should be examined.—AN ENGLISH BEE-KEEPER.

TO CORRESPONDENTS

* All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **8, Rose Hill Road, Wandsworth, S.W.**, and **NOT** to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Wednesday Morning's Letters.—Letters and parcels which arrive on Wednesday morning can rarely be attended to, and replies published in the current issue. Some parcels and letters are delayed in delivery through being misdirected. The correct address for everything intended for the Editor is given above.

Camellias (Amateur).—If you will comply with our simple conditions above, as other inquirers do, we will answer all the questions you like to ask, and more than this expression of willingness cannot be expected under the circumstances.

Dracaena Leaf Spotted (C. L. H.).—The small spots on the leaf, dark in the centre, with a yellowish ring around, are due to a minute parasitic fungus (*Septoria insularis*), which causes the premature decay of the affected parts. It chiefly attacks the lower leaves, especially of plants grown in a somewhat low temperature, and during the winter or early spring months. The best preventive is sponging the leaves occasionally with any of the advertised insecticides containing soap, as most of them do, being more or less emulsions. Such adhere to the cuticle and even sink into the pustules, therefore apply with a sponge to effect that object.

Diseased Neapolitan Violet (H. L. C.).—The plant is attacked both at the root stems and in the leaves by the Violet disease fungus (*Peronospora violæ*). It is mainly induced by a stagnant atmosphere, not necessarily by keeping the lights of the frame closed, but through the plants being very close together and dense in the crowns, so that air does not circulate freely through them. The plant had at least a dozen apologies for crowns, and, in consequence, very weakly and crowded. We mention this, as to have healthy plants they must be from individual suckers or offsets planted singly each spring, at least 9 inches apart, in good rich rather firm soil in an open situation, kept free from runners and weeds during the summer, and properly supplied with water and nourishment. For repressing the fungus use a mixture of charcoal dust and air-slaked lime, dry and floury, dusting the plants lightly, and keeping them free from all dead or decaying leaves. This treatment answers well with us. Such plants as the one sent cannot possibly be satisfactory.

Boiler Leakage—Cucumbers, Tomatoes, and Mushrooms (A. D. H.).—Drive in the "tow" as you propose with a mixture of red and white lead, and bind a thick plaster of this mixture, if you can, tightly round the faulty part, which may be in one of the tubes. You will find practical information on "Cucumber and Tomato troubles," and how they were surmounted, by Mr. Iggulden, in the issues of the *Journal of Horticulture* of February 18th, March 4th, and April 1st, 1897. Mr. Mortimer's method of growing Cucumbers in a small quantity of soil is described by Mr. Dean in our issue of May 20th of the same year; and an excellent article on growing Mushrooms for market, by one of the most successful cultivators, was published on February 10th, 1898. The five numbers, if in stock, will be posted to you in return for 1s. 5½d. sent direct to the publisher, 12, Mitre Court Chambers, Fleet Street, London, but you must be careful to quote the dates we have given. You can also obtain Wright's "Mushrooms for the Million" (which has been helpful to many, including the writer of the article alluded to) from the same address for 1s. 3d., or by ordering through a local bookseller for 1s.

Tuberoses (E. T. S.).—These plants are usually grown and flowered in pots, but we have seen them flower freely in the open air. You had better pot the tubers on arrival in the same way, and in similar soil as you would Hyacinths, burying the pots in cocoa-nut fibre refuse or other suitable material, say under the close stage of a greenhouse, where no drip will reach them. If the soil is pleasantly moist when used no water will be needed if they are covered with damp material as soon as potted. When growth has fairly started withdraw the pots, and gradually inure the plants to the light, taking care that the soil does not get too dry. As growth advances syringe the plants daily in bright afternoons, and as the weather becomes warmer place them in a frame, keeping it rather close for a time, then gradually increasing the air for preparing the plants, as if they were Dahlias for planting out early in June. If you make no mistake in carrying out the advice given you may succeed in your object. The plants should be kept steadily growing without check. We have known tubers planted directly in the open at the end of May grow and flower towards the end of the summer, though some failed.

Eurycles Cunninghami (J. C. S.).—This is an Australian Amaryllidaceous plant near *Paneratium*. To be grown well it should be given a place in the stove, and be treated in a similar manner to *Eucharis* during the season of growth. Unlike *Eucharis*, however, it is deciduous, and requires a thorough rest during winter. Plenty of water should be given while growth is active, the supply being gradually withheld as the leaves show signs of decay in the autumn, no water at all being given during winter. At the beginning of March growth will commence, flowers being produced with or soon after the development of the young leaves. The best time to repot is in March, a compost such as is used for *Eucharis* being suitable. The plant does not resemble the white variety of *Agapanthus umbellatus* in any way. The foliage is very like that of *Eucharis amazonica*, but not so strong. The flowers also resemble somewhat miniature flowers of that plant. They are white, about 1½ inch across, and produced ten or more together on scapes 1 foot high. The species was introduced from Queensland and named after its discoverer in 1824, and was figured in the "Botanical Magazine" in 1835, t. 3399.

Various Plants (R. C. N.).—*Solanum jasminoides* is a greenhouse, wall, or pillar plant, as free in growth as a Jasmine when planted out, and it is better so, with its roots limited to a narrow border, than grown in a pot. We have seen it 15 feet high, covered with white flowers, in a house from which frost was excluded. It may be increased by cuttings in sandy soil under a bell-glass in genial heat in the spring. *Streptosolen Jamesoni* may be grown in the same way, but requires a warm greenhouse; it can be grown and flowered in pots, either in a small state, or shifted into larger and trained as free pyramids. It is beautiful in any form by its orange-scarlet flowers. Mr. Bennett Pöe usually exhibits handsome specimens at the May shows of the Royal Horticultural Society. Propagation is effected by cuttings, in the same way as the *Solanum*, but preferably with a little more heat. It is worthy of extensive cultivation. New Zealand Flax, popularly Flax Lily, botanically *Phormium tenax*, is occasionally seen in conservatories. It produces persistent leaves, 4 to 6 feet in length, and 3 or 4 inches in width. The dwarf form, *P. t. Veitchianum*, with its striped leaves, is the more ornamental and generally cultivated. *Phormiums* are increased by seeds and division. The Cactaceous plants to which you refer are *Phyllocactus Thalia*, which produces beautiful large crimson flowers, suffused with violet; and *P. Vesta*, which has pure white flowers. They are varietal forms, raised in the Chelsea establishment of Messrs. James Veitch & Sons, Ltd. The flowers are only of short duration. You do not say what kind of information you require, and trust that what we have said will to some extent meet your wishes.

Violets Damping Off (A Reader of Our Journal).—The Violets are simply damped through the foliage being forced and then subjected suddenly to cold. This is a common failing of the Neapolitan and the form of it known as Marie Louise—the lavender flowered variety with a white eye, not the deeper coloured form, which, with the variety you name, is much hardier in both flower and foliage. There does not appear to be any trace of Violet disease (*Peronospora violæ*) fungus, but there may be some on the root stems (see reply to "H. L. C."). We can only advise more careful ventilation, but with security from frost.

Marechal Niel Rose Blooms Damping (Gardener).—There was nothing of an organic nature to injure the buds. They had evidently suffered from some constitutional defect, probably lack of nourishment. Under similar conditions we have known a little extra feeding with a quickly acting fertiliser produce satisfactory results, a small pinch of the following mixture per pot acting like a charm:—Phosphate of potash three parts, dust charcoal one and half part, and sulphate of ammonia one and half part, mixed, a thimbleful sufficing for an 8-inch pot. It is difficult to account for some blooms being affected and others not; but the position of the plants and differences in vigour of the growths may account for the divergences.

Foster's Seedling Vine Leaves Curled (W. C.).—The cutting away of the Black Hamburgh on which the Foster's Seedling was grafted five or six years ago is sufficient to account for the crumpled condition of the leaves and somewhat stunted growth, as there would be a considerable deprivation of support. There is no disease, or anything than that stated to indicate the cause of the present condition of the growths. You say "the cut-back stem has not bled a drop," and that the top shoot of the Vine is all right. Just so, the flow of sap being always strongest at the extremity, and there was not sufficient for all the growths. No doubt the Vine will come stronger later on—that is, when it has made roots corresponding to the top, or sufficient to supply the requisite sap. As for the one shoot on the Black Hamburgh adjoining going in the same way, we can form no opinion as to the cause in this particular instance. Such isolated occurrences are not uncommon in vineries, and may arise from variations in bud development and maturation.

Planting Vines (G. Simpson).—The Vines should be planted out without delay, especially as they have not been cut down, which must not now be done, as they would no doubt bleed, and this weakens and retards the growth. Instead of shortening, rub off the buds at the upper part of the cane and down to a couple of buds from the base provided these are in a light position, and when the shoots from these are a foot long the cane may be cut away. Reserve the most promising shoot, cutting off the other when the one selected has got a good start. This will give you a stout cane, and a free rod has considerable value in after years. With good management the Vines will grow 20 feet or more, and can be cut down next season to three buds above the lowest wire of the trellis. By leaving the Vines full length now the growth will be relatively weak, though you may, if the wood of the canes is well ripened, allow a few more buds to start, pinching all but the leader. The other plan, however, is the more satisfactory in the end.

Seedling Cyclamens (J. Thomson).—The seedlings ought now to be placed singly in 3-inch pots, and after April grown in frames during the summer, with plenty of air after becoming established, shading from bright sunshine, a single thickness of tiffany when the sun is powerful being sufficient. By July most of the plants will have filled the pots with roots, and they should then be shifted into 5-inch, or if the plants are very strong into 6-inch pots, in which they will flower. Good drainage must be provided, and a compost used of turfy loam and leaf soil in equal parts, with a free admixture of sharp sand. The roots proceed from the base of the fleshy rootstocks, and these should only be about half covered with soil, leaving the tops clear from whence the leaves and flowers proceed. The plants must be kept near the glass to prevent drawing, shading in bright weather only, watering liberally, but not excessively, and sprinkling them on fine afternoons to encourage growth and keep the plants free from red spider and thrips. The plants should be housed in September, assigning them a light position in a greenhouse; but they flower best in a temperature of 50° to 55°, though when in bloom they last much longer in a temperature of 45°. They require a humid atmosphere during the summer, and the pots should stand on a damp base, not on dry boards or an open stage.

Figs Going Off (Wilts).—The cause is the failure to flower, and that is induced by excessive vigour, or the drawing away of nourishment by the growth. Thus Fig trees grown for the first crop are often stopped very closely at the commencement of growth to concentrate the energies on the Figs, and very little syringing is practised, as this tends to promote wood growth, and also interferes with the opening of the fruit for aëration of the flowers. Of course root action has a great deal to do with the vigour, the trees often being too rampant in growth, which can only be overcome by lifting and confining the roots to narrow borders of calcareous and firm material, then the trees grow slowly, sturdily, and fruitfully. After the fruit has taken its first swelling, and remains stationary for a time, water should be kept from the apices, then they will flower, and after that swell freely up to changing; when ripening, water must again be kept from the fruits. Fig trees are almost always trained with the points of the shoots away from the sun, and their last made growths, where the first-crop fruits are produced, do not get well ripened, then, when the rush of sap comes in the early stages, away the trees go to wood. In a house where Figs always cast the fruit, the trees on being moved to the back of the house, confining the roots to a narrow border, and training the shoots down the trellis, gave grand results in both the first and second crops, because the growth was then sturdy and the points thoroughly matured.

Tomatoes on Ashes (S. J.)—Your plan will do very well, or the ashes might extend beyond the boxes. Liquid manure would be wasted on them now. Plant nutriment will be washed into them from the boxes by the time the roots protrude. There are two kinds of superphosphate—bone and mineral, the former containing a little nitrogen, and that is why it was recommended. When the boxes are filled with roots you should add periodical top-dressings of rough rich turfy loam, which will become interlaced with roots for imbibing liquid nutriment. When the plants are bearing, much water will be needed.

Palms Raised Out of the Pots by Roots (G. S.)—You may cut off the lower part of the roots with a sharp knife, thus making the roots fit the pots and allow for a little fresh soil. Such practice, however, checks the growth. A wire edging placed around the rim of the pot to the height well above the roots of the plants, and this receptacle filled with fibry soil, using moss outside, answers for a time. We have had plants very useful in that way by having *Selaginella denticulata* growing on the basket-like girdle. The plants ought to be given larger sized pots, for to starve Palms, is to ruin them. Why not exchange them for smaller?

Artificial Manure for Nut Trees (F. M. M.)—The best we have seen used was equal parts of soot and air-slaked chalk lime by measure, half a pound of the mixture being applied per square yard and pointed in lightly. The following also answers well. Bone superphosphate, dry and crumbly, six parts; double sulphate of potash and magnesia, three parts; and sulphate of lime, one part, mixed, using 4 ozs. per square yard. This should be pointed in lightly, the dressing extending from the stems to the outside of the spread of the heads. For Hollies and Conifers—rape meal, five parts; steamed bone meal, three parts; sulphate of potash, two parts; and air-slaked chalk lime, two parts, mixed. Of this use 4 ozs. per square yard, and point in, or, if there are roots near surface, cover with a little soil.

Propagating Tuberous Begonias (W. C. S.)—The dry tubers ought to be started in boxes of leaf soil rather than in pots in gentle heat and a moist atmosphere. When both top and root growth have commenced cut up the tubers into as many pieces as can be had each with a shoot attached, and place them 3 inches apart in equal portions of fine loam, leaf soil, and sand. Keep these divisions steadily growing as before, and when the tops nearly touch each other move the plants singly into 5-inch pots, or larger sizes if strongly rooted. Tuberous Begonias never start so healthily in small pots as they do in boxes, and the latter are to be preferred for dry tubers, whether they are to be split up or not. One good shoot will usually develop into a strong plant, and if more form on the divisions remove them when 3 to 4 inches long, and insert singly in small pots of sandy soil. In a close frame and moist heat these soft cuttings are liable to damp, and they ought to be placed in a dry heat of 65° to 70°, with a bottom heat of 75°, shaded from sun and carefully watered till rooted. More cuttings may be put in as fast as they can be taken without spoiling the plants. In August cuttings will root if inserted in sandy soil at the foot of a south wall. Late rooted plants will form a small tuber, from which a strong growth may be had the following season.

Boronia megastigma (W. T. W.)—If you have not had experience in growing Heaths, say such as *Erica hyemalis*, from year to year, and raising plants from cuttings, you will not be very likely to succeed with this fragrant *Boronia*. They require substantially the same treatment in not being cut back below healthy leaves, starting fresh growth in a light warm greenhouse, with the pots on a close, not open latticework, stage, bringing on clear days, never letting the soil get once too dry or too wet, but keeping the roots active in firm sandy peat soil. They are best in frames during the summer. Cuttings are rooted in firm, very sandy peat, surfaced with pure sand, watered, the cuttings, 2 inches long, of rather firm tops, half divested of leaves, then inserted, sprinkled lightly to close the sand round them, covered with a bell-glass, and the pots plunged in a moderately warm pit or frame, shaded as needed for a time, the glass wiped dry daily, and water given with consummate judgment. Many persons have not exactly the right conveniences for propagating and growing the plants in question, and some have failed. If you succeed it will be a feather in your cap. We see no reason why you should not succeed with the *Cannas*. These plants and others you name are ten times easier to manage than Heaths, and the Heath-like *Boronia* and *Leschenaultias*.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*M. L. G.*)—1, *Iris chinensis* (fimbriata) (*Capel*).—A good form of *Camellia japonica*. (*A. A. T.*)—Though we do not undertake to name wild flowers, we give the names of those you have sent. 1, *Lamium purpureum* (Purple-flowered Dead Nettle); 2, *Mercurialis perennis* (Perennial Dog Mercury) male plant; 3, *Capsella bursa-pastoris* (Shepherd's purse). (*E. H.*)—1, 2, and 3 are all forms of *Dendrobium nobile*; 4, a variety of *Dendrobium Leechianum*.

TRADE CATALOGUES RECEIVED.

Barr & Sons, King Street, Covent Garden.—*Hardy Perennials and Alpines.*

J. Green, Dereham.—*Annual Guide.*

Harrison & Sons, Leicester.—*Farm Seeds.*

J. Laing & Sons, Forest Hill.—*Clivias.*

COVENT GARDEN MARKET.—MARCH 30TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1 6	to 4 0	Grapes, lb. ...	2 0	to 3 0
Cobs ...	21 0	22 6	Lemons, case ...	11 0	14 0
Filberts, 100 lbs. ...	0 0	0 0	St. Michael's Pines, each	2 6	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzoneria, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, l. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ferns, small, 100 ...	4 0	to 8 0
Aspidistra, doz. ...	18 0	36 0	Ficus elastica, each ...	1 0	7 0
Aspidistra, specimen ...	5 0	10 6	Foliage plants, var., each	1 0	5 0
Azalea, per doz. ...	24 0	36 0	Hyacinths, doz. pots ...	8 0	12 0
Cineraria, per doz. ...	6 0	9 0	Lilium Harrisii, doz. ...	12 0	18 0
Cyclamen, per doz. ...	9 0	18 0	Lycopodiums, doz. ...	4 0	6 0
Dracæna, var., doz. ...	12 0	30 0	Marguerite Daisy, doz. ...	6 0	9 0
Dracæna viridis, doz. ...	9 0	18 0	Mignonette, doz. ...	6 0	12 0
Erica hyemalis, per doz. ...	9 0	15 0	Myrtles, doz. ...	6 0	9 0
„ gracilis, per doz. ...	6 0	9 0	Palms, in var., each ...	1 0	15 0
„ various, per doz. ...	8 0	12 0	„ specimens ...	21 0	63 0
Euonymus, var., doz. ...	6 0	18 0	Pelargoniums, scarlet, doz.	4 0	6 0
Evergreens, var., doz. ...	4 0	18 0	Tulips, various, doz. bulbs	0 9	1 6
Ferns, var., doz. ...	4 0	18 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2 0	to 4 0	Maidenhair Fern, dozen		
Arum Lilies, 12 blooms ...	2 0	3 0	bunches ...	4 0	to 8 0
Asparagus, Fern, bunch ...	1 6	4 0	Mignonette, doz. bnchs. ...	2 0	4 0
Azalea, dozen sprays ...	0 4	0 8	Narciss, white (French)		
Bouvardias, bunch ...	0 6	0 9	dozen bunches ...	2 6	5 0
Carnations, 12 blooms ...	1 0	3 0	Orchids, var., doz. blooms	1 6	12 0
Daffodils, doz. bunches ...	3 0	8 0	Pelargoniums, doz. bnchs.	6 0	9 0
Eucharis, doz. ...	3 0	5 0	Roses (indoor), doz. ...	3 0	5 0
Euphorbia jacquiniiflora,			„ Red, per doz. ...	3 0	5 0
per bunch ...	1 0	2 0	„ Tea, white, dozen ...	1 0	2 0
Gardenias, doz. ...	2 0	4 0	„ Yellow, doz. (Perles)	1 6	4 0
Geranium, scarlet, dozen			„ Safrano (English), doz.	1 0	2 0
bunches ...	4 0	6 0	„ Pink, dozen ...	4 0	8 0
Hyacinths (Roman) dozen			Smilax, bunch ...	1 6	2 0
bunches ...	4 0	6 0	Tulips, dozen blooms ...	0 6	1 0
Lilac (French), bunch ...	3 0	4 0	Violets, dozen bunches ...	0 6	1 0
Lilium longiflorum, 12 blms	4 0	6 0	„ Parme (French),		
Lily of the Valley, 12 sprays	0 6	1 3	bunch ...	3 0	4 0
Marguerites, doz. bunches	2 0	3 0	Wallflowers, doz. bnchs. ...	3 0	5 0



POTATO EXPERIMENTS.

THE results of two sets of experiments in the growing of Potatoes have been recently published, and they are interesting as showing how much may or may not be learnt from them according as the conditions are favourable or otherwise.

It is too often the case that experiments are conducted in a way and under circumstances that are very far removed from those ordinarily met with on a farm; and for the average farmer, unless he can make allowances, knows his lesson beforehand, and therefore is able to read between the lines of the report, they are of little educational benefit.

The Cheshire County Council has inaugurated a series of experiments in Potato growing, and last season the first crop of the series was grown at their Agricultural School at Holmes Chapel. Unfortunately the field on which the Potatoes were grown has been recently ploughed up from old pasture, having grown a crop of Oats in 1896, and been grass for at least eighty years previously.

As the soil is heavy, there is a very large store of unexhausted fertility which must take the crops several years to reduce to ordinary farming condition. It is evident, therefore, that whilst the general results are good and conditions favourable for an equal test of the capabilities of the several varieties on a virgin soil; on ordinary farm land much greater variations might be found to exist between the different sorts as regards cropping qualities.

For instance, early kinds which never grow too much top would be favoured by a rich soil, whereas a vigorous late variety, such as would be suitable for medium soil, would grow too much haulm and a rough sample of tuber on newly taken up land.

The Oats in 1896 were not manured, but last year 20 loads of farmyard manure, 4 cwt. superphosphate, 1 cwt. kainit, and $\frac{3}{4}$ cwt. sulphate of ammonia per acre were applied for the Potatoes, and such a tilling as this should produce an excellent crop even on poverty-stricken land.

The varieties chosen to experiment upon were not very representative ones, most of them being comparatively new; this latter, however, might be a good feature. The Bruce was the one most generally known to the farming world.

The results were wonderfully even, the early kinds producing about 10 tons, and the second earlier about 14 tons per acre. Of the later kinds, Up to Date produced over 17 tons, and Bruce over 13, and these were respectively first and last in this section. Now, we have found that Up to Date can beat Bruce by much more than 25 per cent.; in fact, we have grown it two years, and each year it has just given twice as heavy a crop as the Bruce. Our experience of the two varieties convinces us that on ordinary arable land the Bruce is not in the running at all with Up to Date, but with very high cultivation it might more nearly approach to it. This view seems to be borne out by the result of the Cheshire experiments. There is one lesson also to be learnt from them, and that is that the Bruce is still one of the most valuable Potatoes for resisting disease, as it is easily at the top of the tree as regards soundness.

The other set of experiments to which we have referred is that worked by the Irish Congested Districts Board during 1897, and from this series we think much valuable information may be gleaned. Several well known varieties were tested side by side on ninety-seven plots to ascertain which was the best to take the place of the Scotch Champion. The varieties included the following well-known sorts—Beauty of Hebron, Up to Date, Antrim, Beauty of Bute, Garton, Maincrop, Irish White, and Champion. As the trials were spread over a large variety of soils in very widely differing stages of fertility, the net average results are far more instructive and valuable than those of the Cheshire County Council alluded to above.

For one thing, instead of an equality of results which the Cheshire experiments practically amounted to, we find in these Irish experiments very divergent returns, and as a whole the lesson learnt is that the Scotch Champion still fairly holds its own, easily distancing all competitors but one. This one, however, is proved to be distinctly its superior, and far away in advance of all the other kinds tried. The Irish White did fairly, but not as well as the Champion, and of the others the Antrim and Maincrop came in about an equal fourth. The results, as regards keeping qualities, are not yet published, but we should fancy that the Maincrop would stand well in this respect.

There is, however, one very striking result which is common to these two widely different sets of trials, and that is the distinct superiority of the Up to Date; and when we remember the wonderful result of the Lancashire County Council tests of 1895, when manures were really the subject of trial, but where the Up to Date easily out-distanced in every case the other excellent varieties used, there is only one conclusion to be drawn, that in the Up to Date we

have the Potato of the century. The Magnum Bonum was a great find; but Up to Date, as a cropper, is so immeasurably superior to everything that has been seen that it is almost a miracle. It has large size, good shape, and most vigorous constitution, the haulm being far in advance of any other variety for size and stability. As to quality, opinions differ at present; but if we were to hazard an opinion we should be inclined to say that the quality is too good to last. The demand for seed has been so great in our neighbourhood that £7 and £8 per ton has been a usual price, and offers can only now be obtained of very small quantities at fancy prices and quite as a favour.

What is most wanted now is a good second early. Up to Date has only one fault—viz., lateness. Can anyone find us a Potato as good, but to ripen in August? We should be only too glad to give it a trial.

WORK ON THE HOME FARM.

This is the time for sowing grass and Clover seeds, and though a few may have been sown, the bulk has yet to be put in. Many farmers like to sow their Clover with the seed grain, and even drill it mixed with grain, but this latter method results in burying the small seeds too deeply. They should be well covered, but near the surface, and they like a firm seed bed.

Small seeds are not easy to sow by hand, and now that good sowers are becoming so scarce, small seed drills are generally used; we, however, do not like them, unless they are used for simple broadcasting. The most successful method we know is to Cambridge roll the land, and broadcast the seeds either by hand or drill; the seeds fall into the numerous little furrows made by the ring roller, and a light set of harrows will cover all up, and still they will be quite near the surface. Heavy soil might have a flat roll over it after the harrows, but very light land would be better as the harrows leave it, for high winds sometimes make bad work of light soil if left too fine and smooth.

We have had a little rain, and the land harrows rather better; but Turnip land recently eaten off is turning up very rough, and requires a heavy rain to make anything like a fine mould.

Wheats are looking wonderfully well; they have been once more rolled, and will now have a good harrowing. A dressing of nitrate of soda will be given where needed in about a fortnight. Last year we used sulphate of ammonia as being relatively cheaper, but prefer nitrate when, as at present, it is the cheaper form of nitrogen available.

Pastures have been much refreshed by the rain, partial though it has been, and there is plenty of food for the young lambs. If frosts would keep off there would soon be a good bite for the cattle, and they might be got out from the yards. It is to be hoped we shall have more and copious rain next month, for the small crop of last year's hay is almost gone, and there will be another light crop if the season remain dry. Springs hold out well so far, but we fear they are not likely to stand the test of a long drought.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1898. March.	Barometer at 32° and Sea Level	Hygrometer		Direction of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture			
		Dry.	Wet.			Max.	Min.	In Sun	On Grass		
		inches	deg.	deg.		deg.	deg.	deg.	deg.	inches.	
Sunday	20	30.151	40.9	38.4	N.W.	43.7	51.9	36.0	92.1	32.6	—
Monday	21	30.244	36.8	33.3	N.	42.1	51.9	27.8	91.1	23.0	—
Tuesday	22	30.191	34.4	32.6	N.	41.1	49.9	27.9	71.9	27.1	—
Wednesday	23	29.814	39.7	37.1	W.	40.2	49.6	31.1	79.1	28.8	0.671
Thursday	24	29.760	37.9	35.8	N.W.	39.9	41.8	34.3	83.6	30.1	0.093
Friday	25	29.860	32.7	32.7	N.	39.1	27.1	29.2	44.9	26.6	0.278
Saturday	26	29.567	37.1	35.1	N.	38.1	38.8	32.2	45.2	31.7	0.265
		29.941	37.1	35.0		40.6	45.9	31.2	72.6	28.6	0.707

REMARKS.

- 20th.—Bright almost throughout, but cloudy about 2 P.M.; clear, cold night.
 21st.—Brilliant all day, and clear night.
 22nd.—Fog till 9.30 A.M., then fine, with faint sunshine; thick fog again from noon till 1 P.M.; clearing by 3 P.M., and fine after.
 23rd.—Overcast morning, with drizzle and showers; sunshine at midday and at 5 P.M.; N. gale in afternoon and evening, with alternate drizzle and clear sky.
 24th.—Alternate sunshine and showers of snow in morning, and of sleet and soft hail in afternoon; snow again in evening (snowflakes $\frac{1}{4}$ inch diameter at 8 A.M.); gale in afternoon.
 25th.—Gale, with incessant snow and occasional sleet or soft hail from 6 A.M. to 4 P.M.; overcast after.
 26th.—Overcast morning; rain with occasional wet snow from 2 P.M. to 10 P.M.; gale throughout.
 The latter part of the week very cold, and quite exceptionally uncomfortable.
 —G. J. SYMONS.

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Journal of Horticulture.

THURSDAY, APRIL 7, 1898.

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THE CHINESE BANANA.

A PROPOS of a query on page 268, respecting the culture of this, one of the most interesting and handsome of our economic plants, I venture to give details of treatment which afforded highly satisfactory results. In direct reply to the question concerning the particular case, judging from the description of the two plants in tubs, there is no need of despair of the fruit ripening, but to assist them in doing so the bunch should, if not already done, be shortened back as far as those "fingers" which have attained to nearly an average length. If it is possible to give the plants some bottom heat, either by standing the tubs upon the hot-water pipes and packing some conducting material about them, or by any other means suggesting themselves under the circumstances, it will probably facilitate matters considerably. As for cutting the "fingers" in a green state—No; only in particular cases, to be subsequently mentioned, is it advisable to do so, for the superiority of the English-grown Banana is dependant solely upon allowing it to ripen naturally.

Musa Cavendishi, probably the only Banana worth cultivating for its fruit (introduced from China in 1829, and apparently disseminated through nearly all tropical parts of the globe), is accredited with producing a larger quantity of food from a given area than any other economic plant. Whether, owing to the cost of production by artificial heat, home-grown fruit could favourably compete with imported produce, is at least doubtful, but the relative position of the two, so far as quality is concerned, is, I think, pretty much that which obtains with the Almerian and Muscat of Alexandria Grapes. Its culture for appearance as a noble tropical plant, which is of the simplest kind, appears to be wholly apart from the methods necessary to insure its success as a fruit producer, hence luxuriant plants are apt to disappoint expectation so far as that is concerned. I must confess that my ten years' experience of Banana culture for fruit commenced experimentally, and for a part of that time was but a partial success. The home-grown fruit, however, was held in such high esteem

by the family, that continual effort was at last rewarded by being able to supply a crop of Bananas annually, from a rather cramped space, with as much certainty as a crop of Grapes.

Under normal conditions of home culture for fruit, young plants—suckers—which are planted in the spring do not show fruit until the summer of the following year, when they have attained a height of from 7 to 10 feet. These fully developed plants often produce individual clusters of 90 lbs. in weight. The head room thus monopolised excludes their culture from many gardens where conditions exist similar to those it is proposed to detail. This amounts practically to biennial *v.* annual fruiting with a corresponding limitation of growth; and, it must be added, weight of fruit, for our average weight of the fruit clusters may be given as about 40 lbs. The house, which had originally been built as a Pine stove, and ran east and west, was divided by a walk under the apex of the roof into two hotbeds, one of which, on the southern side, was still retained for Pines, the other being partly devoted to the Bananas. Bottom heat was afforded by six rows of pipes in each bed, and on these thin flags were laid, forming a hot-air chamber. From this foundation, and as close as possible to the walls next the walk, the vertical measurement to the roof gave about 7 feet of head room. Starting with the empty bed, a thin layer of sods was placed grass downwards upon the flagged bottom, and upon this ten plants of Bananas were spaced out 4 feet apart, parallel with and close to the wall nearest the walk, the planting taking place in March. Equal parts of roughly chopped turt and decayed manure were then dressed over the roots about 18 inches deep to complete the planting; a high temperature was maintained and no shading permitted from start to finish, save such as was given by a shelf suspended from the apex of the roof, which broke to some extent the direct rays of the sun at midday.

Every inducement was now given to active growth by copious waterings with warmed water, and daily syringings when the house was closed, the temperature being allowed to run up on bright days to 100° Fahr., whilst the normal day temperature was seldom lower than 80°, and ranged from 70° to 75° at night. Towards the middle of June the plants had developed stout stems about 4 feet high, the foliage being here and there in contact with the glass. The conditions of excitement were now subdued by keeping the plants fairly dry at the roots, admitting more air—submitting them, in fact, to a kind of hardening process. From that time plants were daily watched with some anxiety for signs of fruit conception, for it is of vital importance that the short resting period conducive to it should on its occurring be at once changed to the stimulating conditions of active growth. If all went well, in about three weeks from the check being given a slight swelling of the stem some 6 inches below the base of the leaves would be noticed, and almost contemporaneous with it the last leaf was made, which there is no mistaking owing to its puny size. As soon as this was noticed in the majority of the plants tropical treatment, as previously detailed, was at once resumed, and expectation was soon gratified by the appearance of the great purple-bracted inflorescence, the end of which was cut off as soon as the successively developing whorls of “fingers” showed by a diminution in length that nothing could be gained by its retention. Under the active conditions of growth, still maintained, the “fingers” had generally by August swelled to their full size. From thence the ripening was a question of the family’s requirements as to retarding or *vice versa*. In an emergency some of the “fingers” have been cut green and laid up on the shelf previously mentioned in the sun; but this was always regarded as a sacrifice, for, as stated, they were similar to imported samples.

Naturally ripened “fingers” are of a rich, clear, golden hue, being at the final stage bletted with minute brown spots, when they part freely from the stem, although it is preferable to cut them carefully. At this time it may be necessary to examine the clusters morning and evening to remove those which are ready and prevent their falling. The delicate perfume of the ripening fruit will attract all ants in the vicinity to the feast, but a band of tarred sacking round the stems of the plants, and the bending down of any leaves in contact with the

roof, will obviate this. Suckers which spring from the plants early in the season must be repeatedly cut back to the soil surface until the ruit has swelled. One from each plant, in some cases two, may then be allowed to grow freely, and on the removal of the fruit the parent plant can then be entirely removed by twisting it out.

A few notes in conclusion may be of service. The most important thing in this method of growing Bananas is the resting period, which must also be regarded as the most critical stage of the whole operation. One year, owing to this check being unduly prolonged, the embryo inflorescence refused to emerge, swelling the stems to an abnormal size, and resulting in total failure. Another point to notice is that although our crop was an annual one, the last year’s suckers at planting time were really half developed plants. Under the conditions as described our gatherings of naturally ripened fruit extended generally over three months, and on an average seven plants out of the ten produced good clusters. The last year I thus grew them gave the best results, experience having taught us many things I have endeavoured to show in this paper. In that particular year the whole of our ten plants produced fine clusters, the aggregate weight of which was certainly not less than 400 lbs., and probably exceeded that figure, and I always look back with pleasure upon our endeavour to grow the Chinese Banana under difficulties, and the success which was eventually obtained.—MUSA.

FLOWERS AT THE END OF MARCH.

AMAZONIAN March has passed to her rest for the year, and the flowers of spring come with ever-increasing beauty. Their lot is not a happy one when bitter winds prevail. As this is written a fiercer gale than usual is afoot, and the Daffodils strain at their stems as if they would fain flee away to calmer lands. Few of us care for the month. Very beautiful are these Daffodils, and pitiful as it is to see them dashing out their beauty in the wrath of the gale, we look upon them with delight. The soft beauty of *Narcissus pallidus præcox* Blond d’Or, the deep gold of Santa Maria, the great blooms of *telamoni* plenius fill us with joy, added to by the charms of the others now in bloom. Common as is the last-named, it is unsurpassed in its way, and for the garden and the house cannot well be spared.

Sturdy and tall, of excellent form, and of lovely colour, is Henry Irving. The “prince among actors,” as the celebrated player is often called, has no unworthy Daffodil to bear his name. It is also one of the best of the varieties of the type known as *spurius*, and worthy of growing in large clumps in many gardens, in which it is yet unknown. Another fine Trumpet Daffodil is Mrs. H. J. Elwes, of different form, deeper colouring, and coming a little later into bloom. N. Santa Maria, which has been a little difficult to establish in my garden, seems at length to have made itself at home, and is very effective with its deep-coloured flowers, having the trumpets and perianth segments of uniform colouring. It is said to be “orange-coloured,” which is perhaps a slight play of fancy, but it is in truth the deepest yellow of all. Quaint looks the little double Rip Van Winkle, which, as is its wont, has awoke from its sleep to show its sharp petalled flowers. Others there are, with more to come, and April will be bright with the gold and silver blooms.

Too short-lived, but delightful while they last, are the Dog’s Tooth Violets, with their Cyclamen-like blooms and spotted or marbled leaves. We have many newly introduced species, yet none is more beautiful than the finer varieties of the old *Erythronium dens-canis*, which for long years has been grown in our British gardens. Such varieties as *blanca* (white), *Von Humboldt* (violet), or *rubens* (red), will be found to give much pleasure when their annual blooming time comes round. Gardens vary in their nature, but in some, such as this, planting in shade is found to be detrimental to free-flowering, and nowhere have these Dog’s Tooth Violets looked prettier than by the edge of a gravel walk or in the grass in full sun. Some experiments, continued for a few years, have shown that this applies to such Dog’s Tooth Violets as *Hendersoni*, *sibiricum*, *grandiflorum*, *Hartwegi*, *citrinum*, and others, and the clumps which have been grown in shade and moisture must be removed at the earliest opportunity. The puzzling *E. americanum* is best grown in an enclosed division of the rock garden, in stiff soil, and so planted that it cannot find its way, by means of its young tubers, deep into the ground.

Pretty, also, are the *Puschkinias*, which, after some trouble, seem as if they had now found a suitable place in which to grow. Their

clusters of pale pearly flowers, lined with blue, look very pleasing in a sunny part of the rock garden, where they grow in light peaty soil.

The dazzling Tulip has hardly begun its reign of splendour. It is unfortunate for the garden of hardy flowers that so many are unsatisfactory when planted permanently and not lifted and dried off annually. For many reasons it would be a great gain to have more of these Tulips, which might safely be left alone for several years. In some gardens *T. Greigi* is very accommodating in this respect, and is alike valued for its earliness and beauty. It also is all the better of being lifted occasionally.

A very fine Tulip which has flowered in my garden for three years in succession without removal is *Tulipa Kaufmanniana*, which was found in the mountains of Turkestan by Albert Regel. It has previously been mentioned in the *Journal*, but its beauty entitles it to another notice. Of exceeding beauty indeed is the form here, which is a pretty white with a bright yellow centre, the outside being of a fine red or carmine with a white bordering. The flower opens out quite flat in the sun. The variety of *T. Kaufmanniana* which received a first-class certificate from the Floral Committee of the Royal Horticultural Society appears to have been of a different colour, as it was said to vary from pale pink to pale rosy purple. Mr. H. J. Elwes considers the certificated plant inferior to a form he grew, and which resembled mine with the addition of a carmine band above the yellow centre. It is grown in the border, but a group on rockwork would form a delightful picture when the sun induced it to open its flowers to their fullest extent. Kaufmann's Tulip is one of the noblest of a noble race of garden flowers.

The gale blowing as I write is perhaps the severest of the year, and as with it come showers of snow and sleet, one of which now whirls through the garden, we think of broken flowers and injured beauty. A fine tree Lupin is ruined, Daffodils have been nipped off by the ground, and leaves of many kinds have been driven off the plants; yet through all are the white of the *Arabis*, the blue of the Forget-me-not, the purple of the *Aubrietia*, the yellow of the Daffodils, and colours and shades almost innumerable. The Glory of the Snow is with us yet; the Snowdrop has still a few late flowers. There are Scillas, Anemones, Polyanthus, Primulas, Primroses, Grape Hyacinths—white and blue. The round-leaved Cardamine, Megaseas, dwarf Rhododendrons, Heaths, Crocuses, Dodecatheons, Daisies, and others to hold aloft the banner of hardy flowers. When the gentler days come, as come they will, we shall look upon them with greater delight as we think of the wild days of the stormy amazonian month.—S. ARNOTT.

HARMFUL AND HARMLESS GARDEN MOTHS—18.

JUST now, when those species of Sallow and Willow which flower in spring are opening the bloom which has been held back by easterly winds and dry weather, it is not unusual for persons to go out and gather it for decorative purposes. Upon visiting a row of these trees or shrubs by day, should it be fine, we are likely to see a numerous gathering of bees and flies refreshing themselves after their winter's sleep. Then, after dark, appear larger representatives of the insect people, stout-bodied moths, mostly of the *Noctua* tribe we are now considering, who come to take their share of the nectar, to strengthen themselves for the work of oviposition. There may be, perchance, a couple of moths on the same spray, not very unlike each other, but yet the history of the two is quite different. One has burst the pupa shell, influenced by the rising temperature, and is taking an early flight; the other appeared on the wing during autumn, and passed the winter in some retreat.

Gardeners frequently come across such moths during winter and spring. Occasionally, no doubt, their proceedings are the cause of some of these insects waking up from their six months' repose; they disturb them in houses and sheds, probably they now and then kill the insects as "suspects." One of these moths is the herald (*Gonoptera libatrix*), which is a visitor to the flowers of spring, but is said to have received its name from the fact of its emergence towards the end of autumn, when it is regarded as a herald of winter. However, the moth very soon settles down, and it has a curious liking for the dwellings of man. I have seen it hunted out of rooms on the supposition that it was a species which would prey on woollen or silken materials. An entomologist once discovered about a dozen of the herald moths in a garden tool house which had been locked up all the winter, and which they had evidently entered by a small opening. The scolloped, or cut, wings are very distinctive; they are downy, as also the thorax, and the general colour greyish-brown, crossed by a bar of bright red, in the centre of which is a small but conspicuous white spot. The caterpillar I have often taken in June; it is thin and velvety, of a deep green hue, with a pale stripe along each side. Unlike most *Noctuas*, it spins a cocoon of fine silk upon a twig when adult.

Returning to our foes of the genus *Agrotis*, we come to a moth

nearly allied to the species named after the Turnip, but of very promiscuous tastes (*A. segetum*), referred to in the last article. This is *A. exclamatoris*, or otherwise the heart and dart. I do not think the insect ever exclaims, but the gardener may, on discovering the mischief done surreptitiously by the caterpillar. The English name is suggested by a couple of marks, nearly black, upon the brown ground of the fore wings. Mr. Newman has pointed out, also, that the erect collar of the thorax resembles a figure of a flying bird. The moth, therefore, cannot be mistaken for its relative, but the caterpillars of the two are scarcely distinguishable, showing the same series of shining spots on the surface of the body, which varies in colour; usually it is some shade of brown.

Commencing to feed early in July, this caterpillar at first feeds above ground on young plants, or on the lower leaves of garden vegetables; about two months later it takes to an underground life, at least during the day, for an examination by night will often show it busily mining heads of Cabbages and Cauliflowers, sharing the spoil with the equally detestable Cabbage moth caterpillar. Right on into autumn it is eating the crowns or roots of Parsnips, Carrots, and Turnips. Probably it eats occasionally through the winter months, changing to a chrysalis in April; its cell is 3 or 4 inches under the earth. When the Lime tree is in blossom the moths may be noticed hovering round its branches soon after sunset.

Then we have another familiar *Agrotis*, which is called the garden dart, *A. nigricans*, a dingy coloured species, the brown slightly tinged with red; there are a couple of pale spots, rather like a half moon in shape, and a blackish streak joining one of them to the base of the upper wing. It is a July moth. The caterpillar resembles others of the genus in habit, feeding from autumn to spring; it is most frequently noticed in May. This caterpillar is of a greenish brown, sometimes it appears rather of a reddish brown, with a shining plate behind the head. It is best distinguished from its relatives by a double white stripe above the feet, and the rows of black warty spots. It is occasionally taken upon low plants about gardens, no doubt, but its favourite food is Clover, and a company of them has been known to entirely strip a field, finishing off upon the banks and hedgerows near. Another common species is the white line dart (*A. Tritici*). Though thus named after Wheat it does not usually feed upon cereals, but eats Cabbages, Onions, and other vegetables in gardens; also it devours some weeds. It is seldom found above ground, chiefly attacking roots or stocks, excepting along the coast of Ireland, where this caterpillar has been taken freely on the Sea Plantain. On the back it is grey, the sides of the body being green without black dots, but there are some narrow stripes; its head is glossy and small. When dug up it at once rolls into a compact ring. The moth is rather of a grey brown, the wing rays pale, with a white line or streak generally conspicuous on the upper edge of the fore wings. It is a quick flier.

There is scarcely need to describe the common yellow underwing (*Tryphæna pronuba*), a moth no gardener can well mistake for another; the orange-yellow under wings, edged with black, are conspicuous; the upper wings vary much. Some specimens are much darker than others, and the markings differ in their number or tint. This moth is fond of introducing itself to public notice—it enters sitting-rooms, concert halls, churches too; and an individual will be seen careering about a good while from light to light, till at length it gets a fatal burn, or dashes off into the open air. One thing in this moth, only noticeable when it is turned over, is a beautiful golden streak beneath the upper wings. On taking a moth into the hand we are astonished at the muscular power the insect possesses. The moth appears in June and July; there is but one annual brood, eggs being laid at night upon a great many garden plants, on which the caterpillars feed from autumn to spring; possibly they are inactive during very cold weather, remaining then under the earth. A few years ago this caterpillar was found in several instances to be attacking *Chrysanthemums*, and, as I am informed, it not only devoured the foliage, but it was also detected while young hidden in the flower heads. Recently, however, I have had no reports of its occurrence upon these favourite plants. When adult this is a good-sized caterpillar, nearly 2 inches long and stout, of varying shades of green and brown, but always shows a double line along the back, and upon each side a row of black spots.

This insect may be killed, or starved, by the application of soot and wood ashes to the soil, also by watering with diluted gas lime, paraffin, or soapy solutions. It has been recommended to employ children in the work of hunting for the moths during their season of flight, because in the day they lurk amongst herbage, or get into grass, and being conspicuous, may be easily captured. Rather less abundant, yet distributed throughout the British islands, is the lesser broad-border (*T. Janthina*) which has been called the handsomest of the *Tryphænas* on account of the rich colouring on the upper wings. The caterpillar does not seem to have been noticed by gardeners, nor is it often discovered by entomologists; it feeds from autumn to May. It has a

velvety brown body, spotted and striped, with a shining head, and has been caught infesting Primroses and Polyanthus. Sometimes the broad-bordered yellow underwing (*T. fimbria*) flies out of a garden hedge in the summer; the caterpillar lives on Birch and Sallow chiefly. —ENTOMOLOGIST.

LAWNS AND ALLIED SUBJECTS.

(Continued from page 276.)

TOP-DRESSING of impoverished lawns may, under some circumstances, be worthy of consideration where more drastic measures previously advocated do not find favour. The operation is simple, inexpensive, and non-laborious; yet in bad cases, although paying for the little time and trouble it entails, it probably does little if anything more. This is mentioned because more than one case has come under notice where too much has been expected from top-dressing, and apparently too little return given. An instance of this was noticed in a garden where the soil is of an unusually tenacious character, and where at all seasonable and unseasonable times a rather heavy roller had been in use for years, resulting in a most unfavourable condition of soil texture. Those are, however, natural conditions where the soil is superimposed upon a bed of gravel, producing a kind of earth hunger, where occasional top-dressings may be advantageously employed.

COMPOST FOR LAWNS.

For the purpose in question a compost sufficient for even distribution over a given area should be prepared during the winter by collecting in a heap old potting soil, especially such as is provided by the turning out of a quantity of well-fed Chrysanthemums, as well as burned vegetable refuse, wood ashes, with any spare leaf mould or peaty matter. To this may again be added any good ordinary garden soil, to make up the probable quantity required. The whole should be stored under cover, or in such a manner that it will be dry for use in the spring, when a half hundredweight of superphosphate of lime, representing about a cubic yard of soil, may be incorporated with it. After several turnings to mix the whole, the concluding operation of passing it through a half-inch sieve will give a well blended and valuable compost for applying to the lawn during a spell of dry weather in early spring, at the rate of an 8-inch potful to the square yard, to be sown by hand. A good rough bush-harrow, made of stout Thorn bushes, weighted sufficiently to be easily drawn by two men, is a capital implement for finishing off the distribution, and may, in fact, take a few turns with advantage prior to applying the top-dressing.

TRIMMING VERGES.

Passing notice may be given to the trimming of verges, an operation performed every year where neatness and order are appreciated. No more suitable time for this work can be chosen than the present, when all the winter's work, comprising any alterations in the pleasure ground, is practically completed. Previous to paring the edges it is necessary that the margins, rendered more or less friable by the action of frost, should be well consolidated by repeated rollings, or even beating with the turf-beater or back of a spade. A uniform depth from the grass to the gravel is essential to a well-finished appearance, and the verge-cutter being held in such a manner as to give a slightly angled face towards the walk, a more durable edge will result than when the cut is made directly vertical, but the slope to the walk should not be very apparent.

The neat workman will, as a preliminary, scrape well back from the grass margin all loose gravel, thus allowing for cleaning up the parings before it is replaced. Care will be taken that the necessary curves, or any deviations from a straight line, will be outlined in good taste. The garden line, which should be sound and free from knots, will at first be lightly laid in the supposed position, following the line of the curves, which on the concave side will require the staying support of small stakes placed sufficiently close to preserve a graceful outline when the line is drawn fairly tight.

At intervals of a few years certain encroachments made upon the verges at either side of the walk will necessitate a reconstruction of the outline; this, in some cases, will entail the labour of piecing the verge on one side only. The simplest and best method of doing this is to set the line 9 inches back on the lawn, following any curves in the walk, and cut down the whole length, then push the turfing-iron under the sod from the walk along the whole face, and draw the liberated strip of turf forward on the walk as far as may be required, the bared strip behind being made good by the insertion of new sods. This method of piecing by insertion, unless an extraordinary depth of margin has to be made up, is infinitely preferable to patching by addition to the face. The opposite edge may then be cut to match, but in certain cases has to be treated similarly. It is a question for judgment.—SYLVA.

(To be continued.)

CHINESE PRIMULAS.

THE Primula family is a very numerous one, and embraces both greenhouse and hardy species. Everyone is familiar with the Auricula, the Primrose, and the Polyanthus, which brighten beds and borders in spring. These are members of the Primula family, and in their season of flowering are perhaps as much appreciated and probably more popular than the less hardy Primulas which require greenhouse cultivation. Chief among the latter stands the Chinese Primula, one of the best of winter and early spring flowering plants for conservatory decoration. Easily raised from seeds in spring and needing no extraordinary skill in its cultivation, it may be had in bloom from September to April. It was introduced from China in 1820, but since then it has been immensely improved in habit, colour, size of blooms, and floriferousness to such an extent that the transformation is marvellous. The highly developed condition which the Primula has reached at the present time has been effected by careful and persistent efforts in improving step by step on previous attainments, and the floricultural world owes much to those who have striven and succeeded in reaching the present perfection.

There are two distinct divisions of the Chinese Primula—namely, single and double, both of which have numerous shades of colour in the flowers. Strictly speaking there are three divisions when the semi-double varieties are included. The latter and the single flowered can be easily raised from seed, but the double varieties require to be propagated by cuttings. An important point in the habit of Chinese Primulas is their dwarf compact growth of foliage, the best grown examples seldom reaching a greater height than 9 or 10 inches, including the flower truss, which should be thrown up amidst but well above the leaves.

Seeds of Primulas are best sown in April and May on the surface of the soil in well-drained 5-inch pots or shallow pans. Loam and leaf soil, the latter predominating, with plenty of silver sand, forms a suitable medium on which to sow the seed, which must be done thinly. Some cover the seed and others do not. If covered, it should only be lightly, using fine soil or sand. In a mild bottom heat, the pot being shaded with glass or paper, the seeds will soon germinate. A bottom heat of 65° is suitable. As the seedlings advance in size prick them out round the edges of 3-inch pots filled with similar compost as recommended for sowing. Three large or four small seedlings may be placed round each pot. Water lightly at first, but sprinkle daily, shading from sun when it is likely to do the young plants harm. They, however, soon strengthen, and when the leaves begin to overlap each other, divide, and pot singly in 3-inch pots, employing a compost consisting of fibrous loam and sweet leaf soil in equal parts, with the addition of a fourth part of thoroughly decomposed manure, a sprinkling of crushed charcoal and silver sand freely intermixed with the whole, in order that the complete porosity of the compost may be insured.

The pots should be quite clean and dry, crocked carefully with a few potsherds, over which place a layer of moist moss or fibrous portions from the compost, which must be moist, but not at all wet, at the time of potting. In separating the young plants it is necessary to be careful, as the leaves frequently adhere one to the other, and the stalks are liable to be snapped. It will also be evident how much easier and safer it is to handle short and sturdy young plants that have previously had light and airy treatment. A tender brittle condition is a characteristic of young plants which have developed in a too warm, moist, shady, and confined position. Crowded plants, too, seem to have a less number of roots, the lack of which is more unfortunate than the size of the plant.

An important point to observe in potting is to sink the plants low enough, so that no part of the stem below the base of the leaves is above the soil when the potting is finished. This steadies the plants, and the buried portion of the stem emits roots. Pot moderately firmly, yet not compressing the soil to an undue extent. Leave the surface level, and slightly below the rim of the pot.

The treatment after potting insures the best results if the plants are kept rather warm and close for a brief period, so that the roots make an early and vigorous start in the fresh soil. When they have done so more air ought to be admitted, as well as all the light possible, without exposure to direct sunshine in the middle of the day during the summer. Water to the roots will only require lightly applying at first, but when growth increases adequate supplies must be given as needed. As the young plants develop, and the roots commence to run round the ball of soil, either an airy shelf in a greenhouse or a position in a cold frame is desirable.

The next potting may be to 5 or 6-inch pots, or 48's and 32's, as some prefer to term them. The drainage must be again ample and perfect, the compost fairly rich, consisting of rather more fibrous loam and a little less leaf soil, with an increased proportion of decayed manure, thoroughly pulverised cow manure being suitable. Sand and charcoal are also essential. As in the previous potting, sink the plants low down, potting firmly. The compost being moist when used, water will not be required for several days; then give a copious supply,

which may probably serve for a week. Keep the frame close the first week, which will induce the plants to root quickly into the fresh compost, and shade from strong sunshine. The base on which the pots stand ought to be fine cinders or ashes, as this material prevents worms, to some extent, finding their way through the drainage to the soil, and insures regular moisture. The plants are best not far from the glass. When well established give air freely and constantly.

During July and August a frame with a northern aspect obviates the necessity of frequent shading; but the position ought not to be one subject to rough winds or shaded otherwise than from the direct rays of the midday sun. After the end of August Primulas are better for full exposure to sunshine with abundance of air. During that month and September there will be frequent occasions when the lights may be drawn completely off the frames, hardening and strengthening the plants for housing in October.—E. D. S.

BULLFINCHES VERSUS CHAFFINCHES AS BUD DESTROYERS.

THE recurrence of complaints regarding bullfinches of damage done by them among fruit buds and seed beds seems founded on a popular mixing up of two distinct birds. The said damage is undoubtedly done by the chaffinch (*Fringilla cælebs*, L.), and not by the bullfinch (*Pyrrhula vulgaris*, syn. *Loxia pyrrhula*, L.), and yet we only hear the bullfinch alluded to in correspondence, while hundreds are reported shot or caught during those depredations. I take notice of birds in gardens, and constantly see chaffinches, but bullfinches never. Is this singular misconception to continue and the misnomer to be perpetuated?—A GARDEN AND BIRD LOVER.

[Thinking the "misconception and misnomer" ought to be proved, we consulted a very experienced fruit grower, and an equally devoted bird lover, on the subject—so devoted that if a doubt could be discovered the bird would have the benefit of it; yet he is constrained to say:—"The chaffinch, a lively and handsome bird of the finch family, very common in Britain, chiefly haunts gardens and shrubberies, hedgerows, and plantations, and its food consists of seeds, and of insects and their larvæ. The latter are the favourite food of this bird, and it does good service in the destruction of them. It is also fond of the sprouting or newly-sprung seeds or plants of Radishes, Turnips, and other small seeds, practically spoiling seed beds and drills of such seedlings, unless prevented. This may be effected by an occasional evening sprinkling with paraffin solution when the seeds 'peep' through the soil. The chaffinch otherwise does no harm, but much good, in gardens, never interfering with fruit buds or fruit crops. It feeds its young mostly on insects, chiefly small caterpillars, the neat and elegant nest being frequently placed in a fruit tree in a garden or orchard.

"The bullfinch has a short, rounded, robust bill, which it uses very effectively for destroying the buds of fruit trees, and also for getting at the seeds of various plants, such as those of the 'Hardhead' (*Centaurea nigra*). Its food consists chiefly of seeds, mostly weeds, and the buds of various trees, but prefers those of the Plum (of which it has its favourite varieties), Gooseberry, and Red or White Currants, less so those of the Pear and Apple. It seldom visits town gardens, the sturdy-billed sparrow taking its place there in destroying buds; but in the country the bullfinches sometimes appear in such numbers during the spring as to ruin the fruit crop in bush and tree plantations. In one season we have known fifty-seven of these very beautiful birds shot by one person. They nest in large hedges or thickets away from the garden or fruit plantation, hence the little good they do in clearing a few soft insects at breeding time is not felt in gardens, or only indirectly."

We have to confess that the record is in close accord with our experience, and we think the great Plum grower of Mentmore, Mr. J. Smith, knows which variety of Plums in the bud state "bully" likes best.]



HABENARIA BONATEA.

I AM sending for your inspection a fairly good example of the somewhat uncommon S. African terrestrial Orchid *Habenaria Bonatea*. Although not particularly fragrant during the day, at night the flowers emit a very dainty yet penetrating odour, suggesting a combination of *Nicotiana affinis* and Tea Rose. An interesting and peculiar characteristic of the flowers is the provision made for their ready impregnation. The green and white flowers, with their prominent spurs, are rendered all the more attractive by the purity of the white and the freedom with which they are produced on the scapes of well cultivated plants, and these are seldom met with outside botanical collections.—JNO. E. JEFFERIES.

[The spike sent by our esteemed correspondent was a fine one,

and the species is very interesting. It has been known to botanists for some considerable time, but is not sufficiently showy for the majority of growers, except those who pride themselves on the botanical treasures that are comprised in their collection. As Mr. Jefferies says, the green and white flowers are pleasingly fragrant in the evening.]

DENDROBIUM NOBILE ASHWORTHIANUM.

IT is probable that no section of the great family of Dendrobiums is more popular than that of *nobile* and its several varieties. Free in flowering, chaste in colour and form, and comparatively easy to grow, they will long remain in the front rank of Orchids. No wonder then a white form should receive great admiration and practical

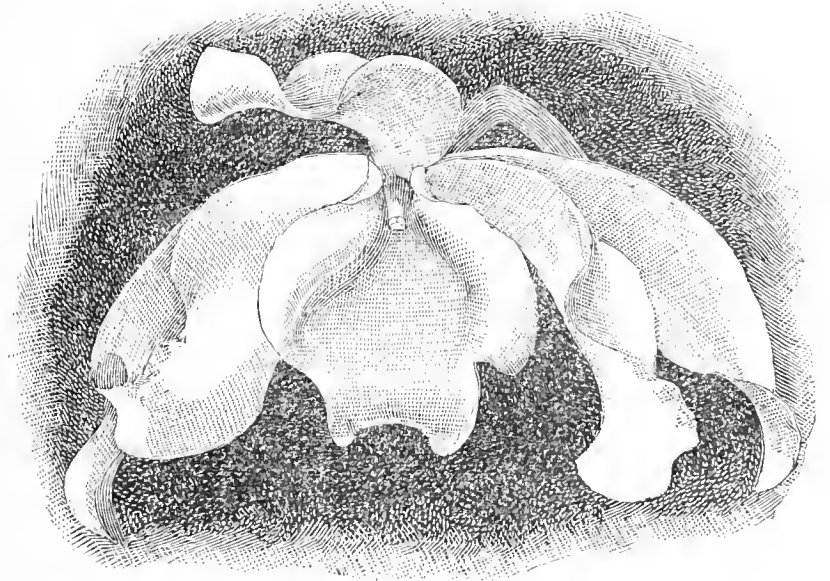


FIG. 60.—DENDROBIUM NOBILE ASHWORTHIANUM.

appreciation from the Orchid Committee of the Royal Horticultural Society in the form of a first-class certificate. Such was the fate of *D. nobile Ashworthianum* when it was staged by Mr. H. Holbrook, gardener to E. Ashworth, Esq., Harefield Hall, Wilmslow, at the Drill Hall, and of which we give (fig. 60) an illustration. As will be perceived the form is not quite that of the type, but as such it is classed. The sepals and petals are pure white, and slightly twisted. The broad open lip is also of that colour, and has the slightest suffusion of light yellow in place of the familiar blotch.

ODONTOGLOSSUMS.

PERHAPS at no other time of the year is the cool house so gay as now, the number of species of the above genus in flower being very large. It is necessary to visit a large trade or private collection to get an idea of the number of fine forms the genus contains, for every importation of well-known kinds is sure to contain something new in the way of spotting or colouring. The lovely forms of *O. crispum* alone are so varied that to describe half of them would take up many columns, while the many hybrid forms, natural and artificial, are getting a numerous lot.

O. Pescatorei is a species that will always be in demand, the chaste and beautiful flowers so freely produced being second to none. Those with large heavy blotches are more valuable than the white ones, simply, of course, because of their rarity, for they are not more beautiful than the ordinary type if a good form of it is obtained. *O. triumphans*, again, is a splendid species for display, the large bold flowers being a bright golden yellow more or less spotted with brown. It is, perhaps, the most free-flowering of all the cool species, and very easily accommodated. Hardly less so is *O. tripudians*, a rarer kind, often imported with *O. Pescatorei*, which it closely resembles in habit though differing entirely in the colour of the flower.

Between these is the fine natural hybrid *O. excellens*, grand forms of which have recently been exhibited. *O. luteo-purpureum*, too, in its many forms is one of the best and freest, while the smaller and more delicate *O. blandum* is a gem in the cool house just now. *O. Sanderianum* comes very near to, if it is not a variety of, *O. constrictum*, and both are charming when seen in good condition. Equally so is *O. Andersonianum* and the many forms of *O. odoratum* and *O. gloriosum*, while many more might be named that are now flowering.

Enough have been mentioned, however, to show how gay the house may be just now, and a few remarks on management will probably be of more interest than a long string of names. In the first place it is very necessary to see that the plants do not flower before they are really strong enough to bear the strain, and, again, those that are allowed to flower should be relieved of their spikes

directly the pseudo-bulbs show the least sign of distress. If these points are not attended to the greatest care and attention in other ways will be futile, for one season of overflowing will take years of careful growing to make it up, if, indeed, the plant ever recover. It has been the cause of the death of hundreds of good plants.

The atmosphere of the house wherein these plants are grown is an important point, and though when many flowers are open one is tempted to use very little water about the floor for fear of spotting, this must not be carried too far. The whole of the Peruvian and New Grenada *Odontoglossums* like a moisture-laden air, always kept moving by free ventilation. Shade, too, is necessary now for the sake of the flowers as much as the plants themselves, but it is not wise to allow the blinds to remain down too long. If a suitable amount of air is put on the first thing in the morning this will prevent the house getting hot all at once when the sun shines.

Keep increasing the air, so that the temperature rises slowly, and at the same time damp freely every part of the house. Thus the foliage will be kept cool, and until the temperature has risen to 60° or thereabouts, the shading is best off the roof. This, of course, refers to the present time; later, in the summer, it is better to shade much earlier, the whole trouble then being to keep the temperature low enough night or day. Recourse is had to wet mats and other things in addition to the usual shading material, but when the sun is pouring down on the glass at midsummer it is impossible to keep the house as cool as the plants require.

With regard to compost it is quite a mistake to be always loading the roots with compressible material, as peat and moss. If, when top-dressing is in progress, a few pieces of crocks and charcoal were provided the evil is not so pronounced, but instances are repeatedly coming under my notice of plants with their roots embedded in sodden material, simply owing to neglect of this matter. It is not, in fact, a good time now to be pulling cool *Orchids* about at the roots at all. If I had a number of plants in bad order, so bad that the roots were not thriving, I should certainly shift them at any time of the year, but for a general repotting there is no time like the early autumn.

Insects at this time of the year seem especially voracious, and many a grand spike has been ruined by slugs eating it at the bottom. If there is an *Odontoglossum* coming into flower these pests are bound to find it if they are in the house, and a continual watchfulness must be kept up by day among the bases of the bulbs, and in the compost at night when the insects are feeding, this by the aid of a light. Traps made from hollowed-out Potatoes are as good as anything for woodlice and small snails, while cockroaches are destroyed by poisoning with arsenic in the form of beetle paste.—H. R. R.

THE AMARYLLIS.

THE present *Amaryllis*, or *Hippeastrums* as they are now commonly called, are descendants of *vittatum*, *reticulatum*, *aulicum*, *psittacinum*, and other species, mostly natives of South America, where, I am informed, they grow naturally in shady copses, woodlands, and on the banks of rivers, and when in flower they form a gorgeous display. By constant and careful hybridising, however, the flowers of the original species have been vastly improved upon, both in size, brightness of coloration, and the general quality of the flowers, so at the present time it would indeed be a retrograde step for any cultivator to go back to the original species.

In dealing with the cultivation of these handsome and gorgeous bulbous plants, this paper will be divided into the following different headings:—Raising of Seedlings, Treatment of Flowering Bulbs, Hybridising, Insect Pests, and General Remarks.

RAISING SEEDLINGS.

Amaryllis are very easily raised from seeds, which in all cases should be sown as soon as ripe, and presuming the plants flower in March and April, the seed will be ripe before the end of May. The most suitable soil is composed of an equal mixture of light fibrous loam and leaf mould, with the addition of a good portion of silver sand, and a sprinkling of wood ashes. Drain the pots or pans thoroughly, and cover the crocks with moss to prevent the soil being washed into the drainage. The seeds may be covered about $\frac{1}{8}$ of an inch with fine sandy soil, then watered with tepid water. Plunge the receptacles in bottom heat of about 75° to 80°, place a sheet of glass over each, and shade from bright sunshine. In about three weeks the seedlings will appear, when the glass may be gradually removed, and by the time the young plants are producing their second leaves they may be pricked off an inch asunder in either shallow boxes or pans, using a little more loam in the compost. They should again be plunged into bottom heat until fairly growing, when they may be placed on the stages of an ordinary stove, where they can be conveniently shaded during very bright sunshine, always keeping them where a genial, moist atmosphere is maintained.

By the autumn the plants will be fairly established, and must be encouraged to make strong, sturdy growth, and when the days begin to shorten place them in the lightest part of the plant stove for wintering. Keep them growing all through the winter, using care with the water-

pot, as if over-watered many roots will perish, and the foliage will be lost at a time when it is most required. The winter temperature for the young plants may range from 60° to 65° by night, with a rise of 5° or so by day, always taking advantage of a sunny day to dew them slightly.

As soon as the days begin to lengthen in spring increase the temperature, when growth will be more rapid, and a further shift will be required. If only a few plants are grown they may be potted, using well drained pots according to the size of the bulbs and roots. A little more substantial soil may be used. We find light fibrous loam, three parts to one part leaf mould, with a fair amount of sand, wood ashes, and a sprinkling of soot, to produce satisfactory results, although where the soil is of a heavy or retentive nature the admixture of fibrous peat and powdered charcoal would doubtless be beneficial. Efficient drainage is always essential, and after potting it is advisable to replunge in bottom heat of about 70°. Should the soil be fairly moist at potting time no water will be required until the roots begin to take hold of the new compost; but a moist atmosphere must be maintained by syringing on all favourable occasions and damping the floors and walls. At this potting the leaves of the plants are tender, so in order to prevent their being broken it is better to stake them.

Where many plants are raised it is better to have a bed in one of the houses, preferably over the hot-water pipes, making up the soil about 4 to 5 inches in depth, and plant out the young bulbs 3 or 4 inches apart, and otherwise treat in the same way as the potted plants. Shade during very bright weather, and when the bed is well filled with roots commence feeding by giving soot water, liquid manure made from sheep's droppings (always in a weak state), and occasionally a slight dressing of Clay's, Standen's, or any other quick acting, stimulating manure. By keeping the plants in a constantly growing condition for about sixteen months they will have made fine bulbs, and as autumn comes on they may be gradually brought to rest by inuring to sunlight, withholding water, and reducing the temperature. These points must be carried out gradually, it often being three months before the foliage all dies down. Those that are in pots may then be placed in their winter quarters on shelves in the greenhouse, and those planted out will be a regular network of roots, which may be torn into convenient sized clumps and wintered on the border of a vinery which is at rest.

FLOWERING BULBS.

A few of the seedlings will now have attained flowering size, and all may be treated as flowering plants. We will assume that when the bulbs are placed in their winter quarters they are devoid of all foliage, and unless they get quite dust dry receive no water at all through the winter months, any greenhouse where frost is excluded being suitable for wintering them. Early in the new year signs of activity begin to show themselves, flower spikes generally being the harbingers of growth. The bulbs should be firm and hard, and it sometimes seems impossible for the spikes to push their way through.

Presuming we have a stock of flowering bulbs, which the previous season were established in 6-inch pots, it is unnecessary to repot them; simply turn them out, rectify the drainage, and place them back again, shaking off any loose soil, and top-dress with fairly good rich soil. Previously prepare a place for them in an intermediate house, where a bottom heat of about 60° can be maintained. This may be done either by means of hot-water pipes or a bed of prepared leaves and stable litter. If the latter course is preferred, the materials should have been mixed some time previously out of doors, and occasionally turned in order to get off the rank ammonia. We find it simpler to utilise the beds in a Melon house, where hot water is used for supplying the bottom heat, the pit's refuse being filled up with cocoa-nut fibre refuse, and the pots plunged therein.

The temperature of the house should be kept about 50° to 55° at night, with a slight rise by day. Do not water the plants until growth has fairly commenced, but keep the house moist by syringing and damping. Give air on all favourable occasions, and as the plants grow afford water at the roots as they require it, and occasionally a little weak manure water, as before advised.

Now let us turn back to the seedling bulbs that have rested. They will require potting, with any flowering bulbs that have not been repotted for a couple of years. The same soil as used at the previous potting will be suitable, and pots 6 inches in diameter are generally large enough for the biggest bulbs. Shake all the old soil from the roots, and pot firmly, then plunge them in the same place as recommended for the plants that were top-dressed. Newly potted plants require no water at the roots for some time, as the damping and syringing is sufficient for them. While in flower the house is kept fairly cool, say about 50°, plenty of air admitted, and always shaded during sunshine.

After blooming the house is required for the cultivation of Melons, when all the plants are placed in a heated pit, shaded during sunshine, and kept at a moist growing temperature of 65° to 75° until about the end of August. Water is afforded as required, and an occasional sprinkling of any quick-acting plant food, also a little soot and liquid manure in a weak state. Towards the end of August they are gradually brought to rest as before advised for the young plants, and when the foliage has died down are placed in their winter quarters until required for starting again.

HYBRIDISING.

This is probably the most important feature in the cultivation of the *Amaryllis*. Not that there is the slightest difficulty in raising any

number of progeny, but in the fact of using suitable varieties for cross-breeding. For instance you may take the pollen from a good dark variety and use it on the fine light one, or *vice versa*, but with what result? You would naturally expect beautifully striped varieties, but would be disappointed, although occasionally you might get a good striped one. The majority, however, would do credit to neither parent. If improved flowers are wanted select two good darks, two good lights, or two good striped, carefully remove the pollen from the flowers that are to be operated on, fertilise with the required pollen, and the results will be both satisfactory and interesting. While speaking of the seed-bearing plants, it is best if possible to keep them plunged until the seed is ripe, as the ripening takes a great deal out of them. Do not leave more than one pod to a plant if it can be avoided. A pod contains usually from fifty to eighty seeds, although I once had an Empress of India with over 100 ripe seeds in it, and from 90 to 95 per cent. of freshly sown home grown seeds will germinate under favourable conditions.

INSECT PESTS.

Bug is a very bad thing to deal with, as when the leaves die down it hibernates in the soil and in the scales of the bulbs. Where any has been detected during the growing period remove all that can be reached, and in winter remove all loose scales, and wash with XL-All insecticide, rubbing it well into the scaly portion of the bulbs with a small painter's brush. Brown scale is also troublesome at times, and must be washed off with an improved insecticide whenever detected. It is always best to keep these pests thoroughly in check, as any handling of the plants results in some of the leaves being broken when they are most required. Black thrips are also troublesome, but fumigating with XL-All vaporiser speedily puts an end to them. Slugs are very fond of the flower spikes when they first appear. They may be trapped with Lettuce leaves, Orange peel, or bran, and caught at night time, or where slugs abound many spikes will be devoured.

GENERAL REMARKS.

It is six or seven years since we took up the cultivation of this handsome class of flowers. We had then a few seedlings which had attained flowering size, and a few bulbs of leading varieties were purchased from a noted firm. From these and purchasing seed our present stock has been worked up, and we have a good supply of flowers from the latter part of February until the end of April. They are always much admired by visitors to the gardens, and are most useful for decorations in the house in a variety of ways. We have found their cultivation much easier and simpler since devoting a house entirely to them; when we had only a few they seemed to be always in the way and wanted moving. Some people talk of flowering them two and three times yearly. They are welcome to do it. We are quite satisfied with their blooming once. Others keep them moist always, and make them semi-evergreen; but they are not so satisfactory as when thoroughly rested in winter, neither are they so good to rid of insect pests.

Size of blooms seems now to be one of the chief requirements in a high-class flower, and blooms with green centres are denounced. A good bloom should be, if a self, of bright colour; sepals and petals as nearly equal as possible, large in size, and quite round. In the striped ones the markings should be clear and distinct.—W. J. IRELAND.

HARDY SHRUBS AND PLANTS IN TOWNS.

(Concluded from page 286.)

AMONGST climbing plants the Virginian Creeper, which belongs to the Vine tribe, stands well to the front as an ornamental plant. In autumn, with its beautiful tinted leaves close carpet-like growth against a wall, it stands unsurpassed in neatness and beauty. This plant does not climb by twisting like the Convolvulus and Scarlet Runner, or by aerial roots like the Ivy, or by ordinary tendrils like Peas, but by those which are furnished with suckers at their ends, and by them adhere to their supports, whether boards, trees, or walls, the latter being far the best. Another trailing plant which may be used as a climber in towns is called the Tea Tree, Box Thorn, Lycium barbarum, or the Duke of Argyle's Tea Tree. It gained the latter name by its leaves being used as a substitute for China Tea, about 100 years ago by the then Duke of Argyle. There may be a little difficulty in inducing it to grow at first, but once let it get established far more difficulty will be experienced in removing it. Although the words Thorn, Box, and Tea are so much used in its popular names, it has no affinity with any of them, but belongs to the Nightshade family, and is a native of the countries bordering on the Mediterranean.

Of the common White Jasmine (*Jasminum officinale*) Lindley says, "The pride of the cottagers, and the envy of the citizen, within whose smoky streets no arts can make it flourish." This, however, is not so; it grows very well in Spring Street and other places in Hull. It is a native of the mountains in India, whence years ago it found its way to the Persians and Arabs, who called it Yasmeeen, and thence passed to Europe, and was known in this country about the middle of the sixteenth century. The flowers yield the oil of Jasmine, but not by distillation. It is obtained through the agency of oil of Ben, which is afforded by the seeds of *Moringa aptera*, and this in cotton wool extracts the fragrance of Jasmine and other flowers placed on it which have not sufficient basis in themselves to fix their scent. This Jasmine affords a good example of unequally pinnated leaves.

Clematis vitalba, popularly called "Traveller's Joy," because it beautifies the roadside hedges; "Virgin's Bower," because it often covers arbours and summer houses; "Old Man's Beard," alluding to the silky elongated styles; "Smoke Wood," because the boys sometimes use the dry hollow stems for a cheap smoke, stands at the head of the list for hardihood, rapidity of growth, defiance of smoke, dust, and crowded places. It will grow in sunshine and out of it, but rather objects to winds, which often break off the ends of the shoots and so retard its growth. I have seen it growing well in a back yard, where it had been planted in a hole cut through a flag-stone. It soon covered the walls, then coolly climbed over into the next yard and filled it, and the next and next too. I have seen it growing vigorously in a passage. True its flowers are not very grand, but it produces an abundance of green leaves, and will cover very quickly a great extent of walls or fences with a little assistance in securing the growths. What more can be expected in a town plant? It does not climb by twisting round, or by aerial roots or tendrils, but uses the stems of its leaves for the purpose. It just turns the entire leaf once round anything it can grasp, taking a strong, firm grip of it, finally placing the leaf in its proper position, and a very simple and effectual mode it is. Another peculiarity of this plant is the growth of the pistil after fertilisation has taken place, imparting a fluffy appearance.

Now for a few words about herbaceous plants. The good old *Iris germanica* grows and flowers well in town gardens. This plant is said to have been introduced to this country from Germany in 1573. There are a very large number of varieties, all very beautiful, and deservedly becoming general favourites. This *Iris*, commonly called the blue *Iris*, or *Fleur de Luce*, was the emblem of the French kings.

Another plant that succeeds admirably is the London Pride (*Saxifraga umbrosa*), also known in some places as "None so Pretty," which name has been corrupted into "Nancy Pretty." Smith, writing of this plant, says it is a pretty rosulate-leaved herb, a native of this country and Ireland. It appears to have been first brought into special notice as a garden plant by George London, who was, between the years 1681 and 1717, a celebrated nurseryman and gardener, and with his partner, Mr. Wise, held more than 100 acres of ground known as the Brompton Park Nursery, now occupied by the South Kensington Museum and the Albert Hall. What a change!

Another excellent town plant is found in the Evening Primrose (*Oenothera biennis*). It is called Evening Primrose because its flowers open about 6 or 7 P.M., and are of a pale yellow colour, smelling like a Primrose. It has no botanical affinity with Primroses, but belongs to the same order as Fuchsias and Willow Herbs. Some people consider it to be a doubtful native of this country, while others believe it to be indigenous.

None of the Heaths or their allies will grow with me, but nearly all hardy bulbs succeed, such as Tulips, Hyacinths, Lilies, Snowdrops, Bluebells, and Narcissus, though the sparrows often eat the flowers of the latter. Antirrhinums grow well, as do Wallflowers and Lily of the Valley. This plant is a native of Britain and other parts of Europe, being generally found in shady places in woods, and as commonly cultivated in gardens. The Foxglove may be added. This is one of our showiest native plants, generally found growing on the margins of and the open parts of woods, where it is conspicuous by its tall spike of handsome flowers. Many garden varieties are very beautiful.

There is a small creeping or trailing plant, called by the learned *Lysimachia nummularia*, popularly Loosetrife, Moneywort, Twopenny Grass, Herb Twopence, and about London Creeping Jenny. This much-named plant should, I think, be much more grown than it is. I often see it in vases, hanging gracefully down, studded with its yellow flowers, and think I must make more use of it.

Dielytra formosa, Michaelmas Daisies, *Epilobium angustifolium*, and *E. hirsutum* must not be forgotten as good growers under adverse conditions, and I therefore regard them as useful plants. *Calystegia pubescens*, the American Bell Blind, and *Convolvulus sepium*, the large white-flowered Bindweed, make two serviceable climbers in small places, where their roots, or rather underground stems, are prevented from spreading too far, and so causing trouble. I think everyone must have seen the giant Siberian Cow Parsnip (*Heracleum giganteum*). It often attains the height 10 or 12 feet. I believe it is the tallest plant in all the order Umbelliferae. It is a stately plant, and will grow almost anywhere. Lupins also do well. In Germany and in some parts of this country the yellow Lupin, *L. luteus*, is cultivated for ploughing in as manure.

Another old vigorous plant should be mentioned, I mean the common Tansy. Much cannot be said about the beauty of its flowers, but the leaves are finely cut and curled, and are of a pleasing green. This plant will, like the *Heracleum*, grow almost anywhere, and is credited with many virtues, besides yielding tannic acid.

I have named a few shrubs and plants which I have found to grow under adverse conditions. I hope there are many more plants that will grow in towns, and this is, I think, a proper time to make a special study of them; also I would hope that many towns will gradually be made more suitable for plants by the provision of wider streets and open squares where the sun can shine on every habitation, and where trees, shrubs, plants and flowers will flourish, purifying the air, beautifying the scene, and giving pleasure to all who see them. Will it not, then, follow that dwellers with such surroundings will have better health, live happier lives, and have better reason than now to say, "There is no place like home!"—A. E. PEAKE.—(Read at a meeting of the Hesse Gardeners' Mutual Improvement Society.)



WEATHER IN LONDON.—In our last issue we had to tell of wintry storms of snow and rain, but since then there has been a return to the spring-like weather. Scarcely any rain has fallen during the week, and on most days the sun has shone with great brilliancy and power. One or two nights have been frosty, while the wind has occasionally felt rather keen. At the time of going to press on Wednesday it was bright and warm.

— WEATHER IN THE NORTH.—The last two days of March were variable, although pleasant on the whole, with 6° of frost on the 31st. April opened with a very slight frost, and one of the finest days of the season. A rather squally wind and heavy showers followed on Saturday and Sunday, and Monday was rather cold, but the evening somewhat milder. On the morning of Tuesday, which was bright and fine, 6° of frost were recorded.—B. D., *S. Perthshire*.

— ADMISSION TO KEW GARDENS.—Mr. Akers-Douglas, in response to a question in the House of Commons on Monday, said he had decided to admit the public to Kew Gardens (not including the plant houses) at an earlier hour than noon on week days in the ensuing months of June, July, August, and September. He should thereby be in a better position to judge of the extent of the demand by the general public for the earlier opening. There were many details involved in the proposal, into which he was having an inquiry made, and he hoped to give further information in a few weeks' time. He hoped that the Queen's Cottage grounds might be formally added to the gardens about the 1st of June, but he could not absolutely bind himself as to date.

— THE AMARYLLIS.—For a number of years Mr. W. J. Ireland, gardener to J. Wakefield, Esq., Sedgwick House, near Kendal, has devoted considerable attention to cross fertilisation and raising improved forms of this gorgeous plant. On the invitation of the Bradford Paxton Society Mr. Ireland read an interesting and practical paper at the bi-monthly meeting of the Society on the 26th ult. The essayist exhibited upwards of thirty cut blooms of high-class named varieties, and several splendid seedlings raised at Sedgwick. The self-coloured varieties were especially conspicuous for enormous size and brilliance of colour. One of the best of this class received the Society's certificate of merit, and was at once named the Bradford Paxton Society by Mr. Ireland in return for the compliment. The substance of this valuable paper will be found on page 300.

— ISLE OF WIGHT.—The Isle of Wight Horticultural Improvement Association held its second annual show of Daffodils and spring flowers at Shanklin on Saturday last. Mrs. White-Popham, who was introduced by Dr. J. Groves (Chairman of the Association), opened the exhibition with a few appropriate remarks. Amongst the principal exhibitors (the exhibits were non-competitive) were Messrs. Barr & Sons, London, with nearly two hundred vases of Daffodils. This exhibit was much appreciated, and fully deserved the Association certificate for cultural merit. First-class certificates were also given to each of the following varieties—Duchess of Westminster, M. J. Berkeley, and Barri conspicuus. Mr. John Gell, Home Farm, St. Lawrence, staged a collection of Narcissi which fully merited the award of certificate for cultural merit. Mr. F. Woods, Steephill Castle, Ventnor, exhibited well grown Cinerarias, which received the Association certificate for cultural merit. Mr. W. H. Jobling, Spring Hill, East Cowes, exhibited a miscellaneous collection of hardy cut blooms and several fine pots of the Blue Primrose. It fully deserved the Association certificate for cultural merit. Mr. J. H. Silsbury exhibited a collection of Daffodils which received the certificate for cultural merit. Amongst other exhibits which added to the interest of the show, which was visited by over a thousand people (admission free), were Palms and Dracænas from Mr. F. Silsbury, Clarendon Lodge, Shanklin; a miscellaneous collection of pot plants, effectively arranged, from Mr. C. H. Snook, Westhill, Shanklin; cut blooms of Tulips from Mr. J. H. Perkin, Los Altos, Sandown; blooms of seedling Amaryllis and fine spikes of *Iris fimbriata* from Mr. W. Tribbick, F.R.H.S., Brooke House, Brooke; and floral decorations by Mrs. A. Carter, Rosendale, Shanklin.

— ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, April 12th, in the Drill Hall, James Street, Westminster, 1 to 5 P.M. A lecture on "Blight and Blessing," illustrated by lantern slides, will be given by Mr. F. Enock, F.L.S., at three o'clock.

— STATION NURSERIES, HORSHAM.—We are requested to state that Mr. Riley Scott, for upwards of twenty years gardener and steward to Miss Foster, The Holme, Regent's Park, and Oakover, Ticehurst, Sussex, has purchased this business. We wish Mr. Scott, who is well known as a constant exhibitor at the shows of the Royal Botanic Society, every success in his new venture.

— CUCUMBER EVERY DAY.—We learn that the new Cucumber Every Day, raised by Mr. Owen Thomas of the Royal Gardens, Windsor, and exhibited by him at the Royal Horticultural Society's meetings on December 14th, February 4th, and March 4th, will be sent out next year as a novelty by Messrs. Sutton & Sons of Reading. On February 4th this variety received an award of merit, and on March 4th the Fruit Committee thought so highly of it that a first-class certificate was awarded.

— DORONICUM PLANTAGINEUM.—Among the early flowering plants now showing themselves in the gardens is the Plantain Leopard's Bane, which is always welcomed as being the forerunner of many bright flowers. As clumps along the borders the plants are highly effective, and will last in bloom for some weeks, while for indoor decoration this *Doronicum* has no superior in the early spring. The long footstalks and yellow starlike flowers are well suited for furnishing light vases, and though the flower is old and well known it is nevertheless welcomed with a fresh interest as each spring rolls round.—H.

— BIRMINGHAM GARDENERS' ASSOCIATION.—The final fortnightly meeting of the winter session took place on the 4th inst., Mr. W. B. Latham presiding over a very good attendance of the members, when Mr. E. J. Mustin, gardener to A. F. Bird, Esq., The Firs, Moseley, Birmingham, read a practical paper on the cultivation of the herbaceous *Calceolaria*, accompanied by a robust specimen in a 10-inch pot as illustrative of the system of culture that he has proved to be so successful. An instructive discussion followed the essay, and a hearty vote of thanks was accorded to the essayist. Messrs. C. R. Bick and Walter Jones exhibited stands of cut blooms of fine Cinerarias, and not the least interesting feature was a flower of the quaint and sombre-looking Chalcædonian *Iris Susiana*—known also as the Widow, the Mourning, the Sad, and the Guinea Fowl *Iris*—shown by Mr. W. Gardiner, obtained with a consignment of other cut flowers from the South of France. The flower had been kept for over a week in a room, and this, combined with the fact of the time in transit from abroad, goes far to prove the durability of the flower in a cut state.

— MR. PETER BARR, V.M.H., AND HIS TRAVELS.—For some years it has been the custom of the founder of the well-known and highly reputable firm of Messrs. Barr & Sons, King Street, Covent Garden, to spend his summers in different parts of the Continent of Europe. His quest originally was for new forms of *Narcissus* for enriching the remarkable collection at Long Ditton, and the great bulbarian eventually became known as the "Daffodil King." More recently, however, he seems to have travelled for seeing the sights and studying the manners and customs of the people, not in the cities alone, but also in the rural districts of the countries which he visited, Spain having been one of his happy hunting grounds. Mr. Barr has just commenced an extended tour. He was booked to sail on Tuesday last by the ss. "Scythia" from Liverpool to Boston, U.S.A., with the intention of passing from there to Vermont, Middleton, and New York, thence to Philadelphia, Baltimore, and Washington, doubling back to New York. He designs seeing what he can in Canada, crossing the Niagara into the States again, visiting Buffalo, Cleveland, Chicago, Milwaukee, and other places. Then he goes to Salt Lake City to see the Mormons, from thence to California and on to Vancouver, there shipping for Japan, China, New Zealand, and Australia, returning by the Cape of Good Hope in about two years. Such is the plan and programme. It is sufficiently comprehensive, one would think, even for a much younger man, though few young men are more active, physically and mentally, than the energetic explorer, and it is hoped that nothing will occur to impede his progress. Mr. Barr has departed with the best wishes of a host of friends, who will be glad to see him home again. He was chosen as one of the sixty recipients of the Victoria Medal of Honour in recognition of his unwearied efforts and success as a pioneer in the improvement and popularisation of the *Narcissus* mainly, and other flowers on which he concentrated his attention. The business of the firm has long been conducted by his diligent and competent sons.

— **GARDEN CHEMISTRY.**—One of the best scientific and practical gardeners of the day writes:—"What an excellent little book is 'Garden Chemistry' by Mr. Cousins. I have been reading it with the keenest relish. It is a long way ahead of all other treatises dealing with this subject, and is absolutely free from a suspicion of trade influence, which mars several chemistry manuals."

— **ASSAULT ON MR. J. DEACON.**—Two men were remanded at Birmingham on Monday on a charge of assault on the Right Hon. J. Chamberlain's head gardener at Highbury. On Friday night the men were discovered in the garden, and afterwards made an attack on the lodge in which the gardener, Mr. John Deacon, lived, smashing windows and doing a considerable amount of damage.

— **HYBRIDISATION AND CROSS-FERTILISATION.**—These terms are not very clearly defined even by the best botanists; that is to say, the line which separates them is not a hard and fast one. Some say that the union of different varieties of the same species is hybridisation, while others term it cross-fertilisation. It is on this point we find botanists differ. There is, however, no difference of opinion as to the term hybridisation when a union is effected between two distinct species.—E. D. S.

— **TEMPERATURES REVERSED.**—An authority on the subject says that up to the present the annual march of temperature this year has been all in the wrong direction. According to rule, February should, of course, be warmer than January, and March warmer still. This year an abnormally mild January was followed by a colder February, and by a still colder March. The decline is not likely to go on much longer, and it would therefore be scarcely safe to predict good skating in July. It is, however, seldom that the ordinary conditions are so completely reversed as they have been this year. In London the mean temperature of March was about half a degree lower than in February, and nearly 3° lower than in January, the month being the coldest March we have had since 1892. The coldest of the past five-and-twenty years occurred in 1883, while the warmest occurred, singularly enough, in the year immediately preceding it. In March, 1883, the mean temperature in London was not much above 37°, while in 1882 it was exactly 47°—a difference between the two of nearly 10°.

— **HESSLE GARDENERS' SOCIETY.**—There was a large attendance of members present at the last meeting on the syllabus, which was held in the Parish Hall on Tuesday, March 29th, when a general review of the past session was taken and the prize essays read. This session has been, in every respect the most successful the Society has had, and hearty votes of thanks were given to those members who had filled the various offices. Medals were won by Mr. Geo. Picker for fruit, and by Mr. J. T. Barker and Mr. Blakey for plants. The essay competition was divided into two classes, one for foremen and journeymen over eighteen years of age, the subject being "The Management of Stokeholes and Boilers;" and for those eighteen years of age or under the subject was "A Year's Management of the Potting-shed and Tool-house." Seven competed in the former class, and the prizewinners were:—First, Mr. J. F. Donoughue, Tranby Croft Gardens; second, Mr. Geo. Giles, Hesslewood Gardens. Mr. M. Skinner, Bishop Burton Hall Gardens, was placed third. In the junior class the first prize was awarded to Mr. C. Hollingsworth, Cliff House Gardens; second to Mr. G. Mason, West Hill Gardens; and third to Mr. Geo. Hardy, Hesslewood Gardens. Messrs. Geo. Gordon, and H. J. Clayton were the adjudicators.—G. W. G.

— **TORQUAY GARDENERS' ASSOCIATION.**—From time to time we have inserted notes relative to the meetings of this Society, and we now have the report and financial statement that were presented at the annual meeting held on the 1st inst. The Committee is evidently well satisfied with the state of affairs, as is only reasonable when it is noted how successful the meetings have been, and also that the balance in hand is larger than it was a year ago. After this and other business had been settled satisfactorily, the Hon. Secretary, Mr. F. C. Smale, on behalf of the members, presented the President with a beautifully illuminated address in a massive gilt frame, surmounted by a monogram (R. H. R.). The supporting easel was included in the presentation. The exquisitely executed work in the address was from the hand of Mr. A. Shelly, one of the Vice-Presidents, who kindly gave his services. Mr. Shelly also received a souvenir of the occasion from the members. The address was signed by 133 members, and ran as follows—"To Robert Hamilton Ramsey, Esq., M.D., C.M. We, the undersigned members of the Torquay District Gardeners' Association, desire to present to you this address as a token of our personal esteem and regard, and in acknowledgment and appreciation of the invaluable services rendered by you to the Association as President."

— **GENTLE SPRING.**—Those are very charming lines that close your leading article on Spring (page 274), and I am rather more disposed to quote "Punch" on the same theme, which possibly are bad enough to be good enough for insertion:—

"Come, gentle Spring! ethereal mildness come!"
Oh, Thompson! void alike of rhyme and reason!
How canst thou thus unhappy mortals hum?
There's no such season!

Dean Mansell used to say that if March "went out as a lamb" it was indisputably "cold lamb." Certainly this year it has gone out "like a madman;" its terrible three-days blizzard, and accompanying loss of life, will not soon be forgotten.—A. C.

— **READING AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.**—Mr. W. H. Lees of The Gardens, Trent Park, New Barnet, read a paper on "Profitable Orchids" before the members of the above Association on Monday evening, Mr. C. B. Stevens presiding. The formal business having been transacted, and a sum of £5 5s. been voted to the special fund raised by the Reading Horticultural Society, the President called upon Mr. Lees to give his paper. In introducing his subject the essayist said that it was not his intention to treat the subject from a market grower's point of view, as the title seemed to imply, but from that of the private gardener, dealing with those varieties most suitable for cutting and decorative purposes. The general routine of the cultivation was briefly dealt with under the following headings:—Ventilation, Heating, Staging, Watering, Manuring, Potting, Compost, Insects and Fumigating. An interesting discussion ensued. A splendid exhibit of Orchids was made, which added greatly to the interest of the meeting and helped to illustrate many of the remarks made by the speaker. A hearty vote of thanks was passed to Mr. Lees and to those members who had been the means of bringing together such a beautiful collection of flowers.

— **THE NURSERYMEN, MARKET GARDENERS', AND GENERAL HAILSTORM INSURANCE ASSOCIATION.**—THREE GOOD P's.—Mr. Alex. James Monro, Secretary, 1 and 2, King Street, Covent Garden, places in condensed form the growth of this useful Corporation. As we published the report on page 287, last week, we can now only indicate the position in 1895-6 and in 1897-8. In the period first named, the premier income was, in round figures, £681; at the end of the financial year just closed, £1360—a gain of more than 100 per cent. During 1895-6 the policies in force numbered 235; square feet of glass insured, 10,408,161; value, £132,215. During 1897-8 the policies increased to 550; glass insured, 20,098,104 square feet; value, £263,590. Claims paid in 1895-6, £283; in 1897-8, £1532—all within six days of the storms occurring. Mr. Monro might not inappropriately head his prospectus the three P's—Prudence, Progress, and Promptitude—prudence in insuring; progress in business; promptitude in payment. Mr. Monro evidently thinks there is another not very bad P—Publicity, and we have pleasure in giving him a friendly advertisement for the good of the cause. If he wants more of this "P," he must Patter out. Mr. Harry J. Veitch is Chairman of the Corporation.

— **"BLACKS" IN POTATOES.**—Is not the dictum of the writer on this topic in last week's issue (page 276) rather strained when he avers that "worse Potatoes were never known within the past fifty years than the present day varieties, as grown and placed on the market?" Perhaps I might ask, Is it not untrue? Because in some districts Potatoes may be indifferent in quality, it far from follows that they are bad everywhere, and indeed they are not so. We should have had just as good Potatoes during the present season as at any time, had we not had to suffer last summer from a severe attack of the Potato fungus. Even in spite of that, what tubers were sound have given little relatively to complain of. But we cannot overlook, in relation to tuber quality, the grave harm that is done when the foliage is destroyed fully a month or six weeks before the tubers are matured. There is no cause, in my estimation, so productive of that discolouration of the tuber when cooked, which the writer terms "blacks," as is this early denudation of leafage. There may be defects in the soil undoubtedly, especially absence of lime, for that is a valuable constituent in the production of starchy matter in the tubers; but nine-tenths of the varied soils in which Potatoes are grown do produce good tubers when the tops are not early destroyed by the disease. The value of spraying with Bordeaux mixture there can be no doubt is not so much the protection of the tubers from disease, as in maintaining the foliage some few weeks longer in a green vigorous condition, and thus enabling it to manufacture starch granules for tuber requirements at the most important period of the tuber's life—that is, just as it is becoming matured or ripened. This phase of the matter demands the fullest consideration.—A. D.



THE YELLOW PROVENCE ROSE.

"PRACTICE" asks about this Rose, and thinks it might be either Persian Yellow or Harrisoni. I turn to my dear old "Rivers" of 1863, the first book on Roses I ever bought, and read as follows:—"The Double Yellow Rose (*Rosa sulphurea*).—It was brought here from Constantinople toward the end of the sixteenth century. It is a native of the Levant, and said never to have been seen in a wild state bearing single flowers. As yet we have but two Roses in this division—the Double Yellow, or Yellow Provence, with large, globular, and very double bright yellow flowers, and the Dwarf Double Yellow, both excessively shy of producing full-blown flowers, though they grow in any moderately good soil with great abundance." I have grown it with some success, and budded it on the Briar; but it is very easy to lose. A very fine specimen grows, or did grow, in great perfection at Burghley, near Stamford town. Exhibitors in the eighties will remember the grand heaps of these Roses which Mr. Webb of Calcot, near Reading, used to exhibit. His Maréchal Niels from the same nut garden were also marvels of colour. This Rose is well worth endeavouring to grow, and is as good a yellow as the two mentioned by "Practice." There is not a yellow Tea Rose which can come near it for depth of golden colour.

I am aware that high authorities identify it with Harrisoni. In my experience it is even a deeper yellow, and of far more solid buds—so solid, indeed, that sometimes half the blooms will not open.

Rivers writes of Harrisoni also, and as follows:—"Rosa Harrisoni is also a double yellow Rose, said to have been raised from seed in America, and sent from thence to this country. This has proved a pretty yellow Rose; its flowers before expansion are globular, but a hot sun makes them expand and lose much of their beauty."—A. C.

THE "GOLD MEDAL" ROSES OF THE NATIONAL ROSE SOCIETY.

THE National Rose Society (founded in 1876), finding that so many inferior Roses were being sent out as new and distinct from existing varieties, all of which were invariably described in the most glowing terms, decided to offer gold medals for any new seedling Roses or distinct sports that were considered of sufficient merit by the judges. Unlike the majority of classes, which are judged by three members, this important class has frequently been judged by from seven to ten or twelve picked judges. To win under these circumstances is a safe test that the novelty is distinct and of genuine merit. In order that the judges may be able to form a better opinion, not only are three blooms to be staged, but a plant from the open ground must be shown at the same time. Thus we not only see the bloom, but can judge of the growth as well. I think the last point of great importance, especially so now that we have so many grand Roses in both habit and flower. It was in 1883 that this class was instituted, and the first gold medal was secured by the late Mr. Henry Bennett of Shepperton.

HER MAJESTY.—This is one of the finest H. Perpetuals we have. We have the pedigree of this grand Rose given as a cross between Mabel Morrison and Canari, and it may seem almost incredible to many that two dwarf Roses should have produced one of such vigour and robustness as Her Majesty. But if we look at other seedlings we find many cases wherein changes play a most surprising part. I do not intend to go into this now, but I do think Her Majesty, as a cross between a H. Perpetual and Tea-scented Rose, should have been classed among the Hybrid Teas. We find evidence of its Tea-scented blood in the foliage. Her Majesty is one of the largest Roses we have, and when caught young has no suspicion of coarseness. More than once it has gained the N.R.S.'s silver medal as the best H. Perpetual or H. Tea in the whole of the large exhibitions of that Society. The description of "pale rose" only does not do this Rose justice. I would rather describe it as a beautifully clear and bright satiny rose. It should be cultivated upon the Briar stock, and comes very good on "cut-backs" and plants well established.

MRS. JOHN LAING.—Mr. H. Bennett, in 1885, showed this variety, which is one of the most useful, reliable, and distinct Hybrid Perpetuals grown. It would indeed be difficult to say too much in favour of it, which, like most of those gaining the gold medal, has also secured the silver medal as the best of its class in the show on more than one occasion. It is large, of perfect shape, sweet scented, and a continuous bloomer from early until late in the season. The colour is a soft rosy pink of a very pleasing shade. Whether as dwarfs or standards, in the open ground or in pots, this Rose is difficult to beat. It also has the desirable quality of coming good every season, and is one of our best Roses for town and suburban gardens.

SIR ROWLAND HILL.—This, staged by Messrs. R. Mack & Son in 1886, was a sport from Charles Lefebvre, and is a counterpart of that variety in growth and form. The colour is a deep velvety plum, most distinct, and really good when in its best form. But I fear it is not quite constant, occasionally reverting to Charles Lefebvre.

SOUVENIR DE S. A. PRINCE.—Introduced by Mr. G. Prince in 1889, this was a sport from Souvenir d'un Ami, and, like most sports, partakes of its parent in all but colour, which is a pale lemon white when young, becoming a pure white as it expands.

MRS. PAUL.—This is one of the most distinct Roses grown. It is a large flower with very thick petals, and when young has a decided Camellia form. The colour is blush white, with rosy peach shadings when growing in the sun. Very hardy, strong growing, and flowering freely when pegged down. It was shown by Messrs. G. Paul & Son in 1890.

SALAMANDER.—A H. Perpetual from Messrs. W. Paul & Son, Waltham Cross. This is an imbricated flower, of a bright scarlet and crimson shade. I have found it very free and good in the autumn, but it is not sufficiently double to retain its best form during a hot summer. It also is an 1890 variety.

MARGARET DICKSON.—This was the first gold medal Rose from the famous Irish firm at Newtownards, and was staged in 1890. Margaret Dickson has made growths of 10 to 12 feet with us, and when these have been pegged down few Roses could surpass it in free flowering. The first two seasons after introduction it was somewhat of a disappointment, few of us succeeding in opening it well. Whether it has become acclimatised to some extent or not, it is now a very reliable and beautiful Rose. It is of perfect form and shape, with grand foliage. Colour white with soft flesh-pink centre. I note that the N.R.S. catalogue calls it an ivory white, and does not mention its charming and delicate shade of flesh pink when young.

MARCHIONESS OF DUFFERIN.—In 1891 this was brought by the Irish firm. It is a Hybrid Perpetual of globular and slightly imbricated form. The colour is a soft rosy pink. It is a free bloomer, and a very vigorous grower.

MRS. W. J. GRANT.—In 1892 Messrs. A. Dicksons & Son exhibited this Rose, which resulted from crossing Lady Mary Fitzwilliam and La France. It is an exceptionally free bloomer, and a neat and compact grower. The flowers are made up of very large and deep petals, and are good from the bud stage until fully expanded. It is one of our best deep pinks for indoor culture, and I have found it a grand Rose for early forcing.

MARCHIONESS OF LONDONDERRY.—The year 1893 brought this dwarf and robust grower with its almost thornless wood. As a cut-back we have few Roses so floriferous. The flowers are very large and full, petals stout, and the colour almost pure white. This, as well as the next, came from the Newtownards firm.

MRS. R. G. SHARMAN-CRAWFORD.—One of the most reliable Roses we have. Its habit is much after Mrs. John Laing, but both shape and colour are distinct. The latter is a deep silvery pink with a clear flesh shade on the borders of its petals. The form is partially reflexed and imbricated, while it is a very free and continuous bloomer.

CRIMSON RAMBLER.—So much has been written about this Rose, which received the gold medal in 1893, that I need do no more than record the fact of its being the only non-exhibition Rose—as the term "exhibition" is understood by rosarians—to win a gold medal up to the present date.

MARCHIONESS OF DOWNSHIRE.—This was the winner in 1894. It is a soft satiny pink of good form and size, very free-flowering, and the blooms set well into handsome foliage of the Baroness Rothschild type. It has come good with me both upon cut-backs and maidens. A compact and robust grower, and one well suited for pots. This, with the three following, emanated from Newtownards.

HELEN KELLER.—The winner in 1895, is one of the most distinct H. Perpetuals. The colour is a bright rosy cerise, while the flower, if not so large as many, is well built up and the petals evenly arranged. It is a fairly good grower and very free blooming.

MURIEL GRAHAME.—The only remark needed in describing the Rose of 1896 is that it is a counterpart of its parent, Catherine Mermet, except in colour, which is a pale creamy white, very faintly flushed with rose while young. Nor can I dismiss this Rose without noting that during the first summer it was in commerce it secured two of the silver medals as being the best Tea Rose in the Crystal Palace and Norwich Rose Shows of the N.R.S. last year.

ULSTER.—This Hybrid Perpetual was the only winner in 1897. We can know little of this Rose, as it is not yet in commerce. But from the flowers shown, and the ground plant, I think it will be an acquisition, especially when we bear in mind that the raisers have never yet sent out a bad variety. It is a robust grower, smooth-wooded, and apparently free blooming. The flower is very large, and upon referring to my notes taken at the Crystal Palace, I find it described as "a very high coloured Caroline Testout, with its deepest shade prevailing throughout." That was my impression at the time.

It must not be forgotten that the dates when these Roses won the medal have no connection with the dates of their introduction to the public. In looking over the above list, it is very pleasing to note that all but one are of British or Irish origin, the exception being Crimson Rambler.—A. PIPER.

GEOGRAPHICAL DISTRIBUTION OF PLANTS IN RELATION TO WATERING.

(Concluded from page 287.)

THE West Indian Isles of Jamaica, Trinidad, Cuba, and Barbadoes have two rainy and two dry seasons each year, the average rainfall being 63 inches. *Ardisia crenulata*, *Pancratium fragrans*, *P. speciosa*, *Passiflora edulis*, *P. laurifolia*, *P. quadrangularis*, *Rondeletia speciosa*, *Xylophylla latifolia* are amongst the West Indian flowering plants. Orchids are represented by *Oncidium papilio*, *Phaius grandifolius*, *Vanilla aromatica*

and *V. planifolia*. Amongst Ferns there are *Phlebodium aureum* and many *Gymnogrammas*, the Palms also being abundant.

The rainfall of tropical Africa is considerably less than that of other parts of the tropical world, and even in its central equatorial belt 50 inches is rarely registered. Included in this category are Senegambia

Thunbergia alata (fig. 61), *Strelitzia regina*, and *Bertolonias*, with such Palms as the distinct and beautiful *Latania Commersoni*, *L. borbonica*, and *Areca rubra*. Also in the central equatorial belt, including Zanzibar, are found *Impatiens Sultani*, *Dracæna Goldieana*, and *Sanderiana*.

Passing to that portion of the New World within the tropics, Mexico



FIG. 61.—THUNBERGIA ALATA.

on the west coast, and Mozambique on the east, with the Islands of Madagascar, Socotra, Mauritius, and Bourbon. They have the year divided into rainy and dry seasons, the annual rainfall in Mauritius being 32 inches. The plants of tropical Africa comprise *Stephanotis floribunda*, *Clerodendron Balfourianum*, *Pentas carnea*, *P. Kermesiana*,

has a rainy and dry season, and the annual average fall is 90 to 100 inches. As its flora is distributed over the tableland, and not in the burning plains of the eastern and western coasts, the whole country is raised by a succession of mountains into the air from 4000 to 6000 feet, and although within the torrid zone possesses a temperate clime and moderate rainfall.

Amongst Mexican Orchids are *Cattleya citrina*, *Chysis bractescens*, *Lælia anceps*, *Lælia majalis*, *Lycaste aromatica*, and *Odontoglossum citrosum*. Succulent plants found growing on rocks include *Echeveria retusa*, *E. secunda*, and many Cactuses. Other native plants are *Aphelandra aurantiaca*, *Achimenes patens* and *picta*, *Bouvardias*, *Cobaea scandens*, *Cuphea platycentra*, *Habrothamnus elegans*, *H. fasciculatus*, *Lobelia fulgens*, *L. splendens*, *Lophospermum scandens*, *Dahlias*, *Fuchsias*, *Mina lobata*, *Poinsettia pulcherrima*, *Salvia patens*, *S. splendens*, *Sericographis Ghiesbreghtiana*, *Tigridia pavonia*, *Zinnia elegans*, and *Pentstemons*. One peculiarity of Mexican plants is their love of full exposure to sunlight. *Monstera deliciosa* is found where its roots can reach water in Mexican forests.

Brazil has no really rainy or dry season; the rainfall of its capital, Rio de Janeiro, is 75 inches, and at other stations 100 inches is registered. In the Departments of Ecuador, Guayil, and Rio Amazon, the annual fall is 276 inches. The air is continually humid from the vast forests in the plains of the Rio das Amazonas, where the mighty river Amazon flows; the winds blow alternately daily from land and sea, and it has a coast line of 4000 miles. Brazilian Orchids include *Cattleya labiata* varieties, *Chysis lævis*, *Lælia elegans* varieties, *Lælia purpurata* varieties, *Miltonia spectabilis* varieties, *Oncidium flexuosum*, *O. sarcodes*, and *Zygopetalum Mackayi* varieties. Amongst Palms are *Cocos flexuosa* and *C. plumosa*. On trees and rocks, as epiphytes, are found many Bromeliads, such as *Æchmeas* and *Vriesias*. Besides these there are such flowering plants as *Dipladenias*, *Begonia manicata*, *B. agrostigma*, *Epiphyllum truncatum*, *Franciscea*, *Gesnera zebrina*, *Hippeastrum aulicum*, and *Manettia bicolor*. *Adiantum cuneatum*, and *Philodendron Lindenii* are indigenous. On the Organ Mountains are found *Streptosolen Jamesoni*, *Pleroma elegans*, and *Lasiandra macrantha*, and at very high altitudes *Sophranitis grandiflora*.

Central America, including Guatemala, Venezuela, Costa Rica, and Colombia or New Grenada, have two rainy and two dry seasons annually, the average rainfall being from 40 to 60 inches. Indigenous Orchids are *Cattleya Trianae*, *C. Mendeli*, *C. chocoensis*, *Miltonia vexillaria*, *Odontoglossum crispum*, *Lælia albida*, *Lycaste Skinneri*, and *Sobralia macrantha*. *Utricularias* are found as aquatics, and *Anthurium Scherzerianum* in swamps. Other native plants are *Anthurium Andreanum*, *Centradenia floribunda*, *Thysacanthus rutilans*, *Amasonia punicea*, *Achimenes*, and *Cestrum aurantiacum*. Peru has a rainy and dry season, and its flora is distributed over the sierra or mountain slopes and valleys of the Cordillera of the Andes. *Bilbergias* are epiphytal here, and amongst native plants are *Daturas* or *Brugmansias*, *Heliotropes*, and *Urceolina pendula*.

Passing from the torrid to the temperate zone we find the rainfall is spread over the whole year. China proper has a very extensive range of climate. At Pekin in the north the average rain is 36 inches, while at Canton in the south 75 to 90 inches is the usual average. Chinese plants should at no period of the year become dry, and during the growing season unlimited supplies of water should be given. Amongst Chinese plants inhabiting our greenhouses are *Abelia rupestris*, *Akebia quinata*, *Camellia japonica*, *C. reticulata* fl.-pl., *Azalea indica*, *A. obtusa*, *A. ovata*, *Chamærops Fortunei*, *Bambusa Fortunei variegata*, *Daphne odorata*, *D. indica*, *Dianthus chinensis*, *Dielytra spectabilis*, *Farfugium grande*, *Hydrangea hortensis*, *Lobelia Erinus*, *Primula sienensis*, *Saxifraga sarmentosa*, *Rhynchospermum jasminoides*, *Spiræa palmata*, and *Chrysanthemum sinensis*, the original species of the race.

Madeira, in the Atlantic, at the extreme north-western point of the African continent, has an average of eighty rainy days spread throughout the year, and an annual rainfall of 30½ inches. The native plants are *Caladium bicolor*, *Clethra arborea*, *Jasminum odoratissimum*, *Solanum jasminoides*, and the red-berried *Solanum capsicastrum*. In the Canary Isles, close to the N.W. coast of Africa, the rainfall is small, and amongst native plants are *Phoenix canariensis*, the greenhouse *Statice*, the *Marguerites* or *Paris Daisies*, and *Senecio cruenta*, the original of the greenhouse *Cineraria*.

Cape Colony, in its elevated table land, has four months of summer, extremely hot and dry. The rainfall of remaining eight months is from 24 to 33 inches. On the slopes and plains are found *Freesias*, *Lachenalias*, *Ixias*, *Gladiolus Colvilli* species, *Nerine Fothergilli*, *N. sarniensis*, *N. corusca*. In the moister parts of the Table Mountain are found *Agapanthus umbellatus*, *Agathæa cœlestis*, *Aphelaxis*, *Burchellia capensis*, *Diosma ericoides*, greenhouse *Ericas*, *Pelargoniums*, *Plumbago capensis*, *Polygala Dalmaisiana*, *Tritonia aurea*, *Schizostylis coccinea*, *Vallota purpurea*, and *Calla æthiopica* (aquatic). On the sandy plains of the Karro are found *Mesembryanthemums*, *Aloes*, *Kalosantes coccinea*, and *Crassula jasminea*.

Chili in South America has a climate warmer than the South of England, and a rainfall of 60 to 90 inches spread throughout the year. Its flora is chiefly on the Andes—*Alonsoa incisifolia*, *Aloysia citriodora*, *Alströmerias*, *Calceolarias*, *Francoas*, *Schizanthus*, *Salpiglossis*, tuberous *Tropæolums*, *Mitraria coccinea*, *Desfontainia spinosa*, and *Lapagerias*.

The southern portion of Australia, whence all those plants styled New Holland plants were imported, has a season of three months of great heat and drought. The remaining nine months have a rainfall of very moderate degree. At Perth, in Western Australia, the average is from 23 to 30 inches, and at Adelaide, in New South Wales, the average is 20 inches. The native plants are *Dendrobium speciosum* and *D. s. Hilli*, *Dicksonia antarctica*, *Alsophilas*, and *Adiantum formosum*, *Acacia dealbata*, found in swamps; *Aotus gracillima*, *Blandfordias*, *Boronias*, *Chorozemas*, *Correas*, *Croweas*, *Epacris*, *Eriostemons*, *Grevilleas*, *Kennedys*, *Lachenalias*, *Phœnocomia prolifera*, *Pimeleas*,

Metrosideros, *Swainsonias*, *Tetratheca verticillata*, *Tecoma jasminoides*, *Seaforthia elegans*, and *Phoenix reclinata*.

New Zealand possesses a uniformly moist climate, without any seasons of drought. Its native plants are *Clianthus puniceus*, greenhouse *Veronicas*, *Coprosma Baueriana variegata*, *Nertera depressa*, *Dracæna australis*, *Clematis indivisa lobata*, *Dicksonia squarrosa*, *Cyathea dealbata*, *Areca sapida*, and *Caladium esculentum*.

To sum up, we find that in the temperate zone plants from China, Chili, and New Zealand require liberal supplies of water, and should never be allowed to get dry; whilst those from Australia, South Africa (Cape Colony), Palestine (whose rainfall on the mountain slopes is only 20 inches), Madeira, and the Canary Isles should be most carefully watered, and excess should be guarded against. In the tropical zone—West Indian, Brazilian and the Central American States, Cochin China, Borneo, Java, Sumatra, and Khaysia Mountains—plants should at no period of the year suffer from extreme drought; whilst Indian, Mexican, and Peruvian plants require a period of rest. Tropical African plants should be most carefully watered, and have a short rest in winter. In my last notes the rainfall of the Khaysia Mountains was given as between 500 and 600 feet instead of that number of inches.—F. STREET.

NOTES ON SALADS.

THE first thing I would like to impress upon the mind of the cultivator of salading is, that what may be termed the essential qualities of the produce can only be fully developed by the careful and timely observance of a few leading rules and principles of cultivation, and that mere cultural details are an elastic and variable quantity, which may be made to fit in with the circumstances of time and place; and secondly, that whatever is destined for the salad bowl should be grown well, and as quickly as is consistent with the nature of the plant and the season of the year, and this should be accomplished by what I will call "fair means." I would deprecate the use of sewage under any circumstances, and even ordinary liquid manure should be eschewed in the finishing stages of growth; in fact I would insist upon the cultivation being throughout of a cleanly and wholesome character, and this it may be if the land is kept in good heart, deeply and well worked, and the crop is allowed sufficient room for full development. These are what I will call "fair means," and by them we can surely and unfailingly raise salading of the necessary succulent quality. Everything, then, should be fresh, clean, crisp, juicy, and "nutty;" nothing of a woolly character is admissible.

It is well, too, to provide as much variety as means will afford, and though some portion of green is generally liked, we must never be short of well-blanced foliage. A Frenchman, whose salads used to be much admired and praised, once observed to me that in England a salad is often spoiled by too much vinegar and too much water. Well, I suppose the grower has seldom anything to do with the vinegar, but he may be responsible for some of the water if his salading happen to require much washing, a condition which I know full well is not easily avoided in a climate where clouds of dust and showers of rain come alternately. But that does not matter; what we have to bear in mind is, that the less washing is requisite the better. This remark, I need hardly say, applies to such things as grow above ground only, and not to underground parts. And now, having said so much upon leading rules and principles and essential qualities, I will refer to the cultural part of the subject.

It has been said, and with some truth, that the heart and soul of a salad is a Lettuce, for it would be difficult to find a perfect substitute for a good Lettuce, Cabbage or Cos. Each has its patrons and admirers, and in each class there are numerous varieties, some being suitable for sowing at one season of the year, and some for another. In early spring it is desirable to sow such sorts as turn in quickly, as at that time there is generally more or less of a scarcity of salading, and at the same time a large demand for it. The Early Paris Market is one of the best for the first sowing, and if put in early in February, brought on for a while in gentle heat, and finished in a cold frame, is most useful. Summer Lettuces require good rich soil, and I prefer sowing them where they are to stand when that can be done. Circumstances, however, will not always admit of this, and then we adopt the next best plan of sowing thinly in a bed from which they can be transplanted while yet small, care being taken to shade and water them according to the requirements of the time. When the young plants are well established and growing freely, a mulching of old Mushroom bed material, or something similar, laid on soon after a soaking of water, is beneficial in several ways, and will help to develop those fat-looking Lettuces that are admired and appreciated by nearly everybody. If liquid manure is used, it should be applied in a clear state, and only in the earlier stages of growth. There should be no suspicion of anything of the kind about the Lettuces when they come into use.

Blanching must not be forgotten when the time for it arrives, and it may be accomplished in a variety of ways. Tying up with a piece of matting answers very well, and is generally sufficient, but if a special pride is taken in this part of the work, a clean flower pot may be turned upside down over each Lettuce—a few at a time, according to the demand—care being taken not to leave them on too long, or the Lettuces will very soon either decay or "bolt." It takes about five or six days in the summer time, and later in the season a little longer, to blanch a green Lettuce of some of the Cos sorts, but such as have the habit of folding closely over often require little doing to.

Seed should be sown frequently during the spring and summer, and in July three or four sowings should be made, as from these will come

the autumn supply, while sowings for winter use may be made during August and the early part of September, perhaps a little later in some localities.

Endive is indispensable for autumn and winter use, and about three sorts are as many as need be grown. The Moss-curl is a good sort to sow about the middle of June for early use, to be followed by the Hardy Green-curl and the Round-leaved Batavian about the first week in July, and again about the end of that month. These three sowings will cover the period when Endive is most in request, but a small sowing a week or two earlier, and one rather later than the times named, may be made if circumstances demand it. Very early sown plants are, however, apt to run to seed prematurely, while very late ones do not develop fully before the cold weather puts a stop to growth. The cultural details for Lettuces will apply equally well to Endive with a little variation. Blanching is most easily effected by placing a piece of clean board over as many plants as are likely to be required in five or six days, pushing it on from time to time when a cutting is made, so as to keep up a constant succession of well blanched Endive. Tying and inverted flower pots may be resorted to where these methods of blanching are preferred. Some people lift a portion of the later sowing of this crop before hard weather sets in, and plant it out in a cold frame or house along with some of the later sown Lettuces, but I much prefer growing some of each in the frame where they are to remain, as these seem less liable to decay during winter than such as have been lifted when fully developed.—H. F.

(To be concluded.)

THE PLETHORA AND PROSPECTS OF GARDENERS.

I HAVE read and pondered over all that has been written lately on this subject, and though by nature of an optimistic turn, I have been constrained by certain present evidences to look in a pessimistic frame of mind as to the prospects of the present and future generations of gardeners.

I am driven to this by the enormous number of gardeners seeking employment. Just let us look at the advertisement columns of, say, the four principal gardening papers, and, to make a rough calculation only, we may make out 200 to 250 applicants for employment in the various departments of either trade or domestic gardening; and these it must be considered are only a portion—those who advertise, and the list does not include those who rely upon getting situations by private means, as nurserymen's, seedsmen's, or other personal recommendations.

Really, to me these columns are the saddest reading of the week, and they reveal a state of anxiety, of hope deferred, of vanishing means, of self-denials personally and domestically, if not of actual privations in some cases, of a sinking of spirits, and of a feeling of general, individual, and professional decadence. Men asking leave to toil, and not being allowed to do so. This is a very perplexing subject—a serious subject—indeed, none more so in the whole range of garden economy, and what are we to do?

The higher places of gardening are coming down—falling out as fast as they can, and gardeners of years and experience are having to submit to a reduction of their own salaries, a reduction of staff and their remuneration, and a turning of a once aristocratic garden into a market garden establishment, where everything is to be sold, from a bunch of Grapes to fronds of Maidenhair Fern, and from a Potato to a bunch of Radishes; the old gardener, who has guided and managed the place with plenty of help for years and years, possibly following his father, and who loves every inch of it, and every plant upon it, and is devoted to the family he has served so long, rather than make a change at his time of life, turns out to dig, and hoe, and weed. There's a pathos in this picture, which is no fancy one, beyond words. And then, amidst all this, one has to read of what may be termed a manufactory of lady gardeners, and swaggering that such and such a one has been appointed to such and such a place.

I am no fusty old bachelor; I have had the priceless blessing of a good mother, wife, and daughter, and my feelings for these and for women generally is chivalrous in the last degree, and I say, and say it emphatically, that only in a limited degree are women admissible in a garden. They are not equal to the general work. As a rule they have not had the requisite training for managing any place of importance. Their management would be either too exacting or too indulgent, swayed as they are by their feelings and emotions. In the lighter, artistic, delicate decorative work they might find a place; but then, our young men can do this now, and do it well.

Do these lady gardeners consider that by their competition they are taking the bread out of the mouth of some married sister, and out of the mouths of her children, by taking the place of that sister's breadwinner? Of course I shall be met by the taunt that girls cannot starve, they must live. I grant that freely, fully; but then, again, is there any sense of coming into a vocation for which they are manifestly unfitted, except in very conditional form? I say no, and I say it out loud, too, No! I expect I shall catch it. I do not mind, as I am only—AN OLD PROVINCIAL.

MR. STREET is not the only person who has written on this perplexing subject; indeed it periodically crops up for discussion, and after being well written about, all sorts of suggestions being made and then forgotten, the matter rests quietly until someone again revives it. The evil, if it be such,

however, goes on all the same, and young gardeners are being made by thousands yearly, for the simple reason that young men must find a livelihood somewhere and somehow.

Generally there seem to be more openings for young men in nurseries and market growing establishments than there are in private gardens, but that is only so ostensibly, as the number of young gardeners in private places must far exceed those in more public establishments. No doubt in the former the work is far more varied, wider in scope, and attractive in character. In market places especially the labour is arduous and monotonous, and devoid of that charm which always attaches to a beautiful and well-kept private garden. The labour in the latter may not, however, be the better paid. But in all cases young men, if they have ordinary powers of observation and intelligence as well as industry, find considerable scope for energy and instruction.

If we have not now as capable a race of young gardeners as the old rigid system of garden instruction, much of which was coarse, pedantic, and almost brutal, produced, then it is the fault of the youths themselves, because they have opportunities to acquire knowledge unknown to young men then. That many of our present youths will make first-rate gardeners there can be no doubt. A far more serious subject is their finding employment. That is the real question at issue. In relation to private gardening we are passing through something of a crisis. The great mainstay of this stronghold of horticulture hitherto, without doubt, has been found in the large private gardens maintained by our aristocracy and country gentlemen, for which Great Britain has been so famous. But many of these fine gardens are passing into other hands, or are being kept on as semi-market providers, with one half or less of the labour they once had furnished to them.

Has not this grave alteration in our old gardening associations something, if not much, to do with the present plethora of gardeners? Whatever may be the views held socially and otherwise to-day, no gardener can view this going under of so many of those who were once the stay and support of the best in horticulture with other than grave concern. We may have the fullest faith in the old adage, "There's as good fish in the sea as ever came out of it," and it is specially true so far as the race of gardeners is concerned; but can we feel assured that with rich people the old love and pride in gardening will continue to prevail?

Whenever death comes to some fine place it commonly means change in the cutting down of garden expenditure, and some declension of employment, with the discharge of young men. That helps to crowd the ranks of the unemployed. Young men, too, to-day seem less patient of occupying subordinate positions in gardens than used to be the case. When a young fellow has been foreman a few years, and has, perhaps, not exceeded twenty-six years of age, he pines to become a head gardener, ignoring the fact that a few years longer in a similar position in a different garden might do him immense service, and give him valuable experience.

The vocation is, relative to so many other occupations, a poorly remunerated one, but that is inevitable, because in private practice it administers so much to luxury. It is a beautiful and an attractive vocation all the same.—A. D.

[While we deplore most sincerely the inability of many worthy men and excellent gardeners to obtain situations which they could creditably fill, we are inclined to suspect that a greater amount of money is expended on gardens, and the raising of garden produce, now than during any past period. It is a change from the relatively few and "great" establishments to the immeasurably greater number of the comparatively small, but well kept, and much enjoyed gardens.]

As to the feared waning of interest in gardening by the wealthy and fairly well-to-do section of the community, we are not able to share those fears for two reasons. 1, Because there are probably ten times more honorary subscribers to local and provincial horticultural societies now than there were a quarter of a century ago. 2, Because of the constant additions to the roll of Fellows of the Royal Horticultural Society. Every meeting brings new supporters, and the total, we believe, now approaches 6000.

What we foresee is this: A number of young men who are trained in "great" gardens will have to be content with the charge of smaller; but fortunately, in many of these, happy lives may be spent, and intelligent gardeners highly respected. At the same time the increase of gardeners in the natural way will always be equal to the demand without any artificial manufacture for the sake of the fees for maintaining or increasing the value of the shares in scholastic institutions or otherwise.

We have no prejudice against lady gardeners as such, and if thoroughly trained, though they may not be "equal to the general work," they may be all the same capable directors. Not a few ladies have managed farms successfully, and are taking a large share in managing them now; and it is not easier to make farming lucrative than to make gardens productive, and in other respects satisfactory. The most competent gardeners, or "gardeners," will win in the end, and it will be the fault of the men if they are beaten in the race.]

KEW GARDENS.—These famous gardens, it is said, have been greatly beautified by the recent rains, and are now a delightful place for an afternoon's stroll, though of course not yet in full spring beauty. There is, however, no season of the year which has not its peculiar attractiveness at Kew, and just now in the open air it is the streets of Daffodils, and Scillas, Chionodoxas, and so forth, that are everywhere giving splashes of colour to the vivid turf. The natural mode of growing bulbs is infinitely more charming than the formal regularity of beds and borders.



THE "CARNOT" MYSTERY.

Re Mr. Haggart's query.—Madame Carnot is pure white, G. J. Warren is canary yellow (colour of Australian Gold), Mrs. W. Mease is pure primrose. They are three perfectly distinct varieties.—W. WELLS.

MR. WELLS, in a leaflet, publishes the following, which I ask you to place in parallel columns. The "puzzle" seems to me to decide how such sports happen. The dates suggest that the honour of having the first belongs to Mr. Lees, though granted that Mr. Knowles' is original, the identity of the leading features is remarkable. See below.

"Gardeners' Magazine," December 25th, 1897.

The plants of G. J. Warren distributed last spring were either too weak through over-propagation to give good flowers or else it is not going to prove so satisfactory as its parent, Madame Carnot. I have not seen nor heard of a really first-rate flower being shown, and one is inclined to the opinion that a guinea is too much to pay for a plant that is not vigorous enough to produce an exhibition flower.—W. H. LEES.

"Gardeners' Chronicle," February 12th, 1898.

Plants of G. J. Warren distributed last spring were probably too weak, or it will not prove so satisfactory as its parent. I have not heard of a really good first-rate flower being shown this season, and in my humble opinion a guinea is too much to pay for a plant that is not vigorous enough to produce an exhibition bloom.—E. KNOWLES.

This seems to be a case either of "too much alike varieties" or "the same variety under different names." It appears (if Mr. Wells is correct) that after seeing blooms Mr. Lees first ordered four plants of G. J. Warren and subsequently two more, and was so satisfied that he wished the name changed to Mrs. F. A. Bevan. He will be glad now, as his plants did not give a first-rate bloom last season, that the name was not changed.

It does not appear how much money Mr. Knowles expended over the variety, but he declares he had not heard (he omits the "seen") of a really "good first-class" bloom (Mr. Lees omits the "good"). If anyone has seen a first-class bloom that was not "good" would it not be a bit of a curiosity? We often hear of the same kind of Chrysanthemum "sports" occurring in different places, but it is not often that two literary "sports" so very much alike blossom within about six weeks of each other—one near Barnet, the other near Henley-on-Thames. Yes, this Carnot question is a "mystery." Who can solve the problem? I know nothing of Messrs. Wells, Lees, Knowles, or your southern dons, and am, as we say in our parts, "fair puzzled."—A NORTHERNER.

I HAVE read in your issue of 31st ult. (page 285), Mr. Alex. Haggart's justifiable remarks *re* the perplexing position in which the third Carnot, "Mrs. W. Mease," has been placed by such eminent experts as Messrs. Beckett and Wells through the Belfast dispute. As one who is much interested in the latest addition to the Carnot family I beg to ask your insertion of the following:—

Mrs. W. Mease is decidedly a very soft primrose in colour, and, as shown at Belfast, does not admit that sulphur yellow should be applied in the description, as the sulphur of commerce and canary yellow are too much alike.

I found Yellow Madame Carnot, as grown by myself, to be decidedly canary yellow, inclining to buttery yellow, and from what I saw of it as exhibited by other growers I have not seen any deviation. I also saw G. J. Warren exhibited at Belfast and Edinburgh. At Belfast it was exhibited by Mr. W. Wells, in juxtaposition to Mr. R. McKenna's first prize stand of twenty-four Japanese, which contained a fairly representative bloom of "Yellow Madame Carnot," as supplied by Mr. H. J. Jones, and although Mr. McKenna's bloom was the deeper yellow in colour, and the better finished and better built bloom of the two, taking into consideration they were grown under different cultural conditions, I do not consider them distinct.

I can assure Mr. Haggart, and the rank and file of Chrysanthemum growers, that they need not fear a recurrence of disqualification by using a bloom of Mrs. Mease in a stand with G. J. Warren when distinct varieties are required, as there is no similarity in colouring so close as Golden Queen of England and Emily Dale.

Mr. Mease stated verbally at the October show of the N.C.S. that his primrose sport had remained perfectly true, and was quite distinct from G. J. Warren—syn. Yellow Madame Carnot. I have it from an unimpeachable authority that the bloom exhibited by Mr. W. Mease in his premier stand of forty-eight at the N.C.S. Show last November, and to which was awarded the special prize as the best Japanese bloom in the show, was generally and popularly accepted as the third Carnot, so that if the officiating Judges dispensed their awards in darkness there must have been some considerable period of daylight while this show was in existence.

If my opinion is of any interest to the many readers of the Journal, I have much pleasure in stating that I unhesitatingly ordered, and have

been supplied with, Mrs. W. Mease, and I am pleased to say she is taking kindly to the change, and promises to do well.—HUGH CRAWFORD.

I AM not at all surprised to see on page 285 of the last issue of the Journal that your correspondent, Mr. Alex. Haggart is "mystified" *re* the yellow sport of Madame Carnot Chrysanthemum bearing the names G. J. Warren, Yellow Madame Carnot, and Mrs. Mease; but why there should be this confusion in the names I do not know, for it is a generally accepted fact that the two first names are given to the one variety, and therefore the term Yellow Madame Carnot should be dropped, as the first name was certificated by the Committee of the N.C.S. on November 1st, 1897, and previous to that an A.M. was given it by the R.H.S. on October 26th, 1897, on each occasion as G. J. Warren.

I would now ask, Is there any rule to prevent a plant which has been certificated by either or both of the above Societies under a certain name, and having been distributed to the public under that name, having it removed and another name substituted for it by persons in the trade?

If there is no protection against this, if the system of altering names is persevered in, buyers of new varieties will always be in danger of purchasing one variety under many aliases.

Mr. H. J. Jones, when sending out his Yellow Madame Carnot, stated in a note to the *Journal of Horticulture* (see page 4, January 7th, 1897) that if he found his Yellow Madame Carnot, was identical with G. J. Warren he would give it the latter name; but he does not do so, for I find in his catalogue of the present season he still adheres to "Yellow Madame Carnot."

Surely such an expert as this gentleman is in the Chrysanthemum world should use his best endeavours to prevent such confusion among the names.

With regard to Mrs. Mease being identical with G. J. Warren, I am unable to say from personal knowledge. I only know it was in Mr. Mease's grand exhibit at the Aquarium Show, and was there named G. J. Warren. Another season will remove many doubts on this point, but if this should prove to be identical with G. J. Warren it will be interesting to know under which name the painting which was awarded to it as the premier flower in the show will bear.

During the last season I grew eight plants of G. J. Warren. These were grown side by side, and the buds were selected on each plant so as to have flowers of this variety for as long a period as possible. The last bloom was cut as late as the first week in March. On these eight plants there were scarcely two flowers of the same shade of yellow, as the colour varied on the different plants from a deep canary to a pale primrose. What, I would ask, was the cause of this? Were the deeper colours caused by the plants being more vigorous, or *vice versa*? I should be glad of the opinion on this point of greater experts than—G. J. WARREN, Balcombe Place.

[If, and when, it is admitted by competent authorities who have no interest in the retention of a particular name, that two plants bearing different names are identical, then according to the universal rule established by long usage, the name first recognised, and under which the plant was certificated, is the only right and correct one, any others that may be attached to the same plant being usurpers. Any systematic infringement of that intelligible and perfectly reasonable rule would be calculated to lead to serious confusion and disappointment among purchasers of plants. At present the question of the distinctness or otherwise of the Chrysanthemums G. J. Warren and Yellow Madame Carnot seems to be very much a matter of trade opinion. If the point is not settled before the autumn shows, there will evidently be grave risks of disqualifications occurring. Has it been clearly stated when, where, and with whom the yellow variety exhibited by Mr. Jones, under the name of Mrs. F. A. Bevan, at the December show of the N.C.S., originated, and by whom the blooms were grown? It is not unusual for "sports" very similar in appearance to occur in different localities during the same season. The appearance of these two yellows seems to be a case in point. The origin and history of one is clear—G. J. Warren; and it is difficult to imagine why similar information should not be forthcoming in respect to the other. Raisers of new plants are generally ready to supply full information respecting them, but occasionally the matter is inadvertently overlooked.]

SEASONABLE NOTES ON CHRYSANTHEMUMS.

ALL who are anxious to have high-class Chrysanthemum blooms in November, either for exhibition or home use, must now be fully prepared to give them close attention. The fine blooms we see during the autumn are not produced in two or three months, but are the result of much care from now onwards. In the first place I consider it of the utmost importance that the cultivator, be he large or small, should estimate the number of plants he can pay attention to and comfortably house when the time comes. I venture to say more collections are spoilt through attempting too many than from any other cause. Overcrowding at all stages is a serious mistake.

Having decided on the number of plants to grow, another important step is the selection of varieties. If required for exhibition no one can do better than carefully study the past pages of the Journal, as I consider the returns sent to Mr. Molyneux by most of the leading growers and published therein, are of great assistance not only to beginners, but to all interested in the cultivation of Chrysanthemums. Personally I should much prefer if each contributor's list could be published as sent in, one would then have the benefit of the most successful exhibitor's choice. Another grave mistake made by many growers is attempting too many

varieties, especially so in small collections. It is far better to grow more of the leading varieties, and I would caution beginners against going in for numbers of novelties, especially as there are so many well tried first-rate sorts now to select from. Only too often the new kinds which are of great promise are forced and propagated so hard, that good blooms can hardly be expected the first year, and often flowers that have received notice as promising are never heard of again, though I contend if good flowers can once be produced there is no reason why they should not be produced again.

By the time these lines are in print, assuming the young plants have been properly cared for, they should be ready for potting from 60-sized pots to 32's. I am aware that many growers believe that much success depends on the mixture the plants are grown in, but I can assure them there is really not much in this. Good drainage and a sweet porous mixture, however, are essential. For this potting I advise two parts good fibrous loam, one part spent Mushroom bed refuse, and one part well-decayed leaf soil. The loam should be pulled well to pieces with the hand, leaving in all the fibre. I prefer loam that has been cut and stacked about six months from a good rich pasture. The leaf soil and manure should be passed through a half-inch sieve, and to this must be added enough good road sand to keep it open, thus allowing the water to pass away quickly. To every barrowload of the above add a 10-inch potful of bonemeal, the whole to be thoroughly mixed.

The pots and crocks should be thoroughly washed and quite dry before using. Perfect drainage at each potting I consider of the utmost importance, yet how often one sees this performed in a slovenly manner. In my early days of gardening I had this thoroughly drilled into me, and repeatedly since have I seen the value of the advice then given. The drainage ought to be as perfect when the plant is turned out at any time as when first placed in the pot. How can anyone expect plants to keep in a healthy condition unless the water can pass freely through the pots? One large crock should be first placed over the hole in the hollow position, carefully building up the amount required in layers, gradually making each layer finer, the final one being quite fine, but not dusty. On this should be placed sufficient good clean fibre, taken from the loam heap, to prevent the finer particles of the soil being washed into the drainage when watering. Of course worms must be excluded from the pots at all times, or they will quickly upset the drainage arrangements.

All being ready, the potting can be proceeded with, and when turning out the plants I never attempt to remove the fibre which covers the drainage, or even the smallest crocks, as this will prove more beneficial than otherwise, and many of the principal roots will not be damaged. The soil should be made quite firm, and a small neat stake ought to be placed to each plant. Cold frames ought to be in readiness to receive the plants. We always practise standing the pots on strips of wood in preference to ashes, thus making sure against the intrusion of worms. The plants may be well damped, but not soaked through; we generally do this about four days after potting. The plants must be kept close, syringed twice a day, and, if the weather should be clear and sunny, a thin shading should be afforded them, thus giving as little a check as possible. After the plants have recovered from the slight shock of removal, and if the weather be favourable, admit air much more freely; indeed, from four o'clock till bedtime the lights should be removed altogether, and when I say removed I mean lift them off entirely; merely pulling them back is not sufficient for me, as I am a great believer in fresh air. A north or north-east wind with sun is the most trying, of course, to all newly potted plants.

The points of the plants should be dusted every ten days with tobacco powder, which will keep them free from aphids. The new leaf rust, unfortunately, promises to be a source of great trouble. Many of my friends have had some experience of it already, but so far we have been fortunate in escaping. My advice is, Keep a watchful eye and endeavour to stamp it out on the first appearance by picking off the affected leaves, keeping them well dusted with anti-blight powder, and remove the plants that are at all suspicious away from the general stock.

Stopping is now practised much more than formerly, thus enabling the exhibitor to select the bud which is likely to prove the best bloom at some given date. The locality in which one resides, the varieties, and dates of shows, will have to be considered, but, generally speaking, the end of March and the month of April will be found the best time. As, however, the seasons are so uncertain, I advise only stopping some of each variety, as oftentimes the natural break will produce the best blooms, with the exception of the Queen family, part of which should be stopped at the end of March, and the remainder about the 7th of April. Pompons and Pompon Anemones grown in bush form for producing exhibition blooms, should all be stopped at this season once only. These make handsome plants for any purpose, and it is surprising to me that they are not more cultivated, as a good collection, well grown and arranged, is in my opinion quite as interesting and useful, if not more so, than the larger types; but this section I consider is being spoilt by mere size. Many of the hybrid varieties are now included at many shows. That charming variety Elsie Dordan to my mind represents the true type of a Pompon. The disbudding of these is often carried too far, which robs the plants of much of their natural beauty. I believe in a judicious thinning of the buds—just sufficient to allow the blooms to expand properly. Plants of any section intended for specimens should receive every encouragement, and must be kept in a genial temperature, quite near the glass, where abundance of air can be given them on all favourable occasions. They should be stopped frequently, and kept tied down.—EDWIN BECKETT, *Aldenham House Gardens, Elstree, Herts.*

CYRTANTHUS MACKENI.

SEVERAL very beautiful and brilliantly coloured species of *Cyrtanthus* are known; but though the one shown does not excel in brightness of colouring it is one of the most graceful and free-flowering of the genus. The flowers (fig. 62) are creamy white, or occasionally with a distinct yellow tint, and they are produced on strong scapes 6 to 9 inches in height. It is very easy of cultivation, succeeding well in an ordinary



FIG. 62.—CYRTANTHUS MACKENI.

greenhouse, but it requires a moderately rich light soil, and plenty of water when growing. I have had it for several seasons extremely fine in 3 and 5-inch pots, and strongly recommend it for more extended cultivation.—L.

EMIGRANTS' INFORMATION.—The April circulars of the Emigrants' Information Office and the new annual editions of the penny handbooks show the present prospects of emigration. This is the best season of the year to emigrate to Canada; there is a good opening for experienced farm hands. Good practical miners are always in demand at the large Broken Hill silver mines in New South Wales, and high-class men of all trades have no difficulty in finding employment there; but there is no opening for unskilled labourers. In Victoria and South Australia there is an ample supply of all kinds of labour at the present time. In Queensland the demand for labour is small, but the numerous railway and other works, which are now in progress, are helping to provide labourers with work. In agricultural districts there is a demand for good ploughmen and farm hands. The sugar industry is in a prosperous condition, and there are excellent openings for farmers with a little capital, after they have acquired some experience of the country. In Tasmania there is no demand for more mechanics or farm labourers. In New Zealand there has been plenty of work in nearly all parts for mechanics and country labourers. Cape Colony is well supplied with ordinary labour.

MARIGOLDS.

CALENDULA officinalis, the common Marigold, possesses a long and honourable record. It was not until the sixteenth century that "*Calendula*" was applied to it, and this name was given because of the procession of its flowers through each month of the kalends. Previously it was known as *Caltha vulgaris*—the common "cup" shaped flower. With it, some other plants bore the name of *Caltha*, and it is curious that every one of these, though it is in some instances impossible to discover any affinity to the true Marigold, bear that name also. Thus the African Marigold was *Caltha africana* major, *C. a. minor* bring the French Marigold. *C. sylvestris* was the Corn Marigold; and the Marsh Marigold, the only plant that now bears the designation, is *Caltha palustris*, in olden times saluted as the "King Cup," though Gerard declares it ought to be "King's Cob."

"Gold" was applied to several plants, and underwent many variations, as for example—Guldes, Gools, Goulions, Gowans; which last, though now appropriated by the Daisy, means, in fact, a golden flower. "Marigold" is, of course, "Mary's Gold," and was a flower on many accounts highly valued; but its position of honour arose, no doubt, because of its relation to the Virgin Mary. How it fell into disrepute we cannot now tell; but the probability is that the dressing of shrines, which ceased at the Reformation, and the consequent disuse of garlands to "dight" images of the Virgin, would have an immediate effect in lessening its cultivation. It continued in use as a garland and a nosegay flower till at least the time of Shakespeare, and nothing finer in the language exists than the great poet's references to this humble flower. He selects it as the flower to compare with the eyes of the sleeping Lucrece, which,

"Like Marigolds had sheathed their light,
And, canopied in darkness, sweetly lay
Till they might open to adorn the day."

Double Marigolds were cultivated for the beauty of their flowers as early as the sixteenth century, perhaps much earlier, and they are mentioned early in the eighteenth century as preferable to the single for kitchen and pot herbs. A little later Phillip Miller names the following as then in cultivation. "The common single, the double flowering, the largest double flowering, the double lemon-coloured flower, the greater and smaller childing." The two last produced small flowers round the edges of the capitulum in exactly the same manner as the Hen-and-chicken Daisy. In 1789 "*The Gardeners' Vade Mecum*" has a still longer list.

At the present day the varieties most worthy cultivation are Meteor, generally well known; Prince of Orange, and Le Proust. The best, however, include the large-flowered Orange, distributed some years ago by a continental firm, and which, when in flower, produces a most effective border or bed. Also worthy of attention is a large-flowered lemon-coloured form which appeared three or four years ago. In Messrs. Dobbie & Co.'s nurseries I have seen growing a variety exactly like the first of these, but possessed of a very dwarf habit.

The old growers sowed in February, but April or even May is soon enough to sow for autumn effect, and July for winter and spring flowering. Where a large amount of space is to be covered it is decidedly better to raise the plants thinly in a bed, and thence transplant them to their flowering positions. They may be set as wide as 15 to 18 inches apart, and towards autumn the plants require trimming to keep them in bounds, and in a floriferous condition. Varieties rapidly deteriorate, and as a rule it is better to purchase annually from a reliable source than to depend on home-saved seeds.—R. P. BROTHERSTON.

NATIONAL AMATEUR GARDENERS' ASSOCIATION (LIVERPOOL BRANCH).

MUCH work of a practical nature has been from time to time performed by the above branch, but only a few weeks back some feared that it would collapse altogether. Anyone, however, taking a casual glance at the large Hall, Hackins Hey, Liverpool, on Thursday evening last, would have thought otherwise. The room had been gracefully draped by Messrs. Frisby, Dyke & Co., Liverpool, the platform end being beautifully adorned with *Amaryllis*, generously sent by Messrs. R. P. Ker & Sons, Liverpool. At the other end Mr. R. Pinnington of Roby had arranged many vases of choice Orchids, Camellias, and numerous spring flowers, the whole presenting quite a transformation to one accustomed to seeing the room on ordinary meeting nights.

All this had been brought about by a select Committee suggesting a conversazione, and in the hands of Mr. J. M. Smyth as principal (a gentleman who takes a great interest in the welfare of the branch), success was at once assured, an excellent attendance of ladies and gentlemen being present, who thoroughly appreciated the high class programme of music provided by Messrs. Smyth and Pinnington.

The President, J. H. Drake, Esq., was happy in his remarks, trusting that the ladies would join their ranks and so encourage the Committee to make their syllabus more attractive. It is pleasant to record that Mr. Drake's remarks had the desired effect of making many new members. Mr. Histed proposed, and Mr. Butcher seconded, the vote of thanks to Messrs. Frisby, Dyke & Co., R. P. Ker & Sons, R. Pinnington, and the artistes who had so kindly provided so admirable an evening's enjoyment, each expressing the hope that it would only be the forerunner of many more.

To all, but more especially to Mr. Smyth, the highest praise must be accorded for the arrangements.

LIVERPOOL SPRING SHOW.

MARCH 30TH.

ON Wednesday last the thirteenth spring show was held in the St. George's Hall. As compared with former years the exhibits, although showing a slight falling off in number, were fully up to the excellent quality, and visitors had a really pleasing display for their delectation. A feature reflecting the greatest credit on the stagers was the lowering of the central row of tables, and these were placed at the disposal of the trade, with the result that the effect produced was of the most gratifying character, enabling as it did every plant to be seen to advantage. Two other tables ran the whole length of the hall, these being filled with forced bulbs.

The trade exhibits were of a very high order. Messrs. Dicksons, Ltd., Chester, staged a lovely and interesting collection of *Narcissi* and other bulbous flowers, the arrangement being very striking. Messrs. R. P. Ker & Sons, Aigburth Nursery, Liverpool, were again in splendid form with a grand collection of *Amaryllis*, free flowering, brilliant in colour, stout in texture, and of superb form. Noticeable, too, were the *Azaleas mollis* and *indica* in variety, and decorative plants that completed the fine stand. Messrs. Jno. Cowan & Co., Ltd., Gateacre and Liverpool, had many choice varieties of Orchids, *Azaleas* and Ferns being used with advantageous effect. Messrs. T. Davies & Co., Wavertree Nursery, Liverpool, had a display of *Polyanthus Narcissus*, Lily of the Valley, and bulbs in variety. Messrs. Turner Bros., Liverpool, exhibited floral designs of the highest quality. Mr. B. Ashton, gardener to the Right Hon. the Earl of Latham, staged a box of Royal Sovereign Strawberry, and was with the above named firms awarded the Society's certificate of merit.

Three entered for the group of miscellaneous foliage and flowering plants, 12 feet by 10 feet, arranged for effect in square form. Mr. E. Taylor, gardener to E. Pryor, Esq., Royston, Aigburth, won with a tasteful arrangement in which some well-cultivated Orchids predominated; the second place was taken by Mr. J. Bracegirdle, gardener to W. H. Watts, Esq., with an altogether lighter arrangement, the quality of the plants not being quite so prominent; Mr. F. Field, gardener to J. H. Wilson, Esq., was third, with bright plants.

Ten pots hardy herbaceous and bulbous plants brought five competitors, all having plants of excellent quality, Mr. Ankers, gardener to W. B. Bowering, Esq., Grassendale, winning with fine Solomon's Seal, *Spiræas*, *Dielytra*, *Iris*, *Daffodils*, and *Doronicum*; Mr. T. Hitchman, gardener to Arthur Earle, Esq., Childwall Lodge, being a good second, the latter winning with twelve pots *Polyanthus Narcissus*. For a display of miscellaneous bulbs and foliage plants Mr. Bracegirdle was an easy first with a bright show. Mr. T. Wilson, gardener to O. H. Williams, Esq., was second. Hyacinths were not up to the usual Liverpool standard. For twelve Mr. T. Wilson, a noted winner in this class for many years, was again to the fore. Mr. G. Leadbetter was an excellent second. Mr. Finch, gardener to Joseph Smith, Esq., Newstead, Wavertree, was a capital first for six. For six pots Hyacinths, 7-inch pots, three bulbs in a pot, Mr. Leadbetter was deservedly placed first with dwarf well-flowered specimens, perhaps amongst the finest ever seen at Liverpool. Mr. J. McColl, gardener to J. W. Hughes, Esq., New Heys, Allerton, was a fine second.

Tulips were not very extensive, but of splendid quality, Mr. H. Holford, gardener to C. MacIver, Esq., Beechfield, Heswell, winning for twelve. Mr. J. Williams, gardener to C. J. Procter, Esq., Boscobel, Nocturnum, had a beautiful dwarf set for second position. For six pots Mr. Hitchman showed well. Mr. J. Williams had a pretty six doubles. For three greenhouse *Azaleas*, not exceeding 8-inch pots, Mr. W. Bustard, gardener to T. McClelland, Esq., Aigburth, had charming plants. Five entered for six *Amaryllis*, the prize being taken by a noted grower, Mr. T. Johnson, gardener to G. W. Moss, Esq., Aigburth, with grand examples, Mr. Leadbetter following with noteworthy examples.

The baskets of flowers, the prizes for which were presented by Messrs. Dickson & Sadler, the Secretaries of the Association, were again a very beautiful feature, Mr. G. Eaton, gardener to W. H. Shirley, Esq., Allerton House, Allerton, being placed first with a charming arrangement of Orchids, interspersed with *Asparagus plumosus*. Mr. Carling, gardener to Mrs. Cope, Woolton, was a remarkably close second, the judges having much difficulty in awarding the prize.

For a greenhouse plant in flower Mr. E. Taylor had a handsome *Acacia dealbata*. For a stove plant in bloom Mr. Randall had a superb *Cœlogyne cristata*. Mr. Bracegirdle for three Orchids had *Dendrobium Wardianum*, *Cymbidium Lowianum*, and a magnificent *Angræcum sesquipedale*; Mr. E. Taylor second with fine *Cymbidium Lowianum* and *Dendrobium nobile nobilius*. Mr. Taylor won with a single Orchid, having *Cœlogyne cristata* abundantly flowered. Mr. Taylor was easily first with two Orchids, having grand *Odontoglossum maculatum* and the seldom seen *Odontoglossum coronarium* in superb condition.

Mr. Bracegirdle scored heavily with three Callas. Mr. Geo. Eaton won with two forced hardy plants, and also with a splendid specimen *Davallia Mooreana*; Mr. Bracegirdle showing superior quality in the class for four exotic Ferns. The classes for four and one *Azalea* contained nothing to call for special comment, Mr. A. H. Randall, gardener to A. L. Jones, Esq., Aigburth, and Mr. E. Taylor, winning, the latter winning with one hardy *Rhododendron*, and Mr. Bustard with a good four. The latter also succeeded with six forced hardy plants. A superb *Rhododendron Gibsoni* won a prize for Mr. Randall. Messrs. Bracegirdle and Carling had well-conditioned Palms. *Cinerarias* and *Primulas* were fair, the winners being Mr. T. Ankers, and E. Edmondson,

Esq. For six clumps of Lily of the Valley Mr. Carling was invincible in a strong competition. Mr. Finch won with Mignonette and table plants. Mr. Harrison, gardener to Mrs. W. G. Bateson, Allerton, had four floriferous Azalea mollis, and H. H. Hammond, Esq., one. Bouquets were well done, Mr. J. Williams winning. Mr. Field won the last of the list with six Freesias. The Chairman, Mr. Foster; Vice-Chairman, Mr. Mercer; Secretaries, Messrs. Dickson and Sadler, and the Committee (staging) were prompt and courteous in their duties, whilst the music supplied by Mr. C. A. Black's orchestra was of the highest class.

THE YOUNG GARDENERS' DOMAIN.

AN APPEAL.

THANK you, "Old Boy," for your vigilance over us youngsters, and for your reminder of our apathy. I have read your article on page 226 several times, and the more I think it over the more is its depth of meaning impressed on me. Wake up young gardeners of Britain, let us not be threatened with the "veto" on our "Domain." Do we know, can we foresee, what being contributors to the Journal may mean for us in the long run? I think not, or we should be more energetic in our endeavours, not only at self-improvement, but by taking the opportunity here offered us.

Speaking of self-improvement, I often envy the lot of the young gardener who may be near a town, or where he may have the chance of attending a series of lectures on horticulture. I think they have an advantage over those who are far away in the country, as myself, where there is no opportunity offered for such, and the wish is never gratified. In this case we should study our garden papers and literature pertaining to horticulture more assiduously, so that we may compete with our more favoured compeers; study the writings of other men, and take the leaf from their book. I often notice shorthand mentioned as being necessary for a young gardener, but for myself I cannot yet see its utility. There are other subjects we could study with greater advantage to ourselves. Alas! how many young gardeners of to-day are barely acquainted with the primary subjects of elementary education? Through perhaps no fault of theirs, they were not fortunate enough to receive much schooling. But there is a course open. Take the opportunity of attending a continuation school, and in what place, however remote, is there not one of these carried on? You who are unluckily so placed take the chance, never mind what the world says; fear not in showing your shortcomings, you will overcome them by persevering study, and may come out victors at the last. There is nothing to lose, and much to gain. Our faults are leniently dealt with. Our Editor must be very patient with us, or he would not forbear as he does. We need fear no harsh criticism, and as for fearing jokes from our bothy associates, that can easily be avoided by a *nom de plume*.

Let us hope the next time "Old Boy" occupies our "Domain" it may be with praises to us. We should be ashamed of ourselves to have come to this. As for those half dozen bright pens, whoever they may be, let them strive on, work on, make it their object, as I intend making it mine, to be invited to leave "The Domain" and enter the arena, where they may cope with any friendly antagonist, and not come off second best. Then, as "Old Boy" sees our names taken from the page, may he indeed know that his seeds have fallen on good ground, grown, borne fruit, and will continue so to the end.—SEMPER.

A SCRIBBLE ON SCIENCE AND PRACTICE.

MY conscience has been stirred by the comments of "A Young Scot" and others, so I venture a scribble. The gardener with the above synonym brought to my mind by his energetic epistle (page 247), a subject which I have often thought about. We may have noticed that there are different kinds of gardeners—I mean as regards their energy and aims.

I was, at one time, deeply impressed by the scarcity of the thoughtful and (may I venture it) scientific class of gardeners, and although I am still sensible of the scarcity of that class, I am more aware of its growth. Indeed, in some circles, I find that the scientific side of gardening is sometimes pursued to an unsafe extremity.

It is surely better for a gardener to know the proper rotation of crops and to be expert with the spade and hoe, than to know that the Turnip belongs to the natural order Cruciferae as well as the Candytuft, or that the Carrot is in Umbelliferae with the Parsley. The latter information is undoubtedly good if it accompanies the former, but if it is to be a choice between the two let us have the practice *minus* the science rather than the science *minus* the practice.

But a harmonious blending of the two is quite attainable—indeed, it is almost essential for a good up-to-date gardener. The perfect harmony of practice and science seems to me the acme of gardening, and it is a state of things perhaps too seldom met with. To finish with a demonstration I will try to describe an incident I noticed a few weeks ago.

Two gardeners, A and B, were about to water some plants in a sub-tropical house. They had to take water from a tank which had hot pipes along the top on one side to warm the water. A drew B's attention to the vapour rising from the water at the hole where they had to dip in their cans. When A put his hand in the water at that part, he proclaimed that it was too hot for watering plants with, and was at a loss for a remedy. They could not run in any cold water, because the tank was replenished by the rain.

At last B, thanks to his knowledge of physics, suggested that the

warm water was only at the surface near the pipes, and that the water at the bottom was cold. He proved it by vigorously stirring the water with his can, when it was found that the water had been made quite cool. This is one of many instances I have seen, and it serves simply to show that the practical application of elementary science is a thing to be aimed at by gardeners who would rise in their calling and take as their motto—EXCELSIOR.

[This is Excelsior No. 2. He is a good penman, and may "scribble" again.]

WINTER SALADS.

I PROPOSE giving short cultural notes on the different vegetables used for the above purpose, and which have been under my notice during the past season. For Mustard and Cress we fill shallow boxes with fine soil, and sow the seeds on the surface. The boxes are placed in heat, watered with a fine-rose can and shaded with a board or thick paper. Sow the Cress three days previous to the Mustard, as the former takes longer to germinate, and they can then be used together. When an inch high remove to a cool house.

Several varieties of Endive are grown, and I have found the Green Batavian the most highly appreciated. It is exceptionally hardy, and survives severe weather better than any other I have seen. Sow seeds early in August, in good rich soil, on a south border, transplant in rows a foot apart each way. Water must be given when necessary, and hoeing is beneficial to the plants. These are lifted before severe weather sets in, and planted the same distance apart along the front of an unheated Peach case. Abundance of air is given on all favourable occasions. In November enough are lifted to fill a seed box when packed closely together. The soil used about the roots must be very moist to avoid watering after planting, as they are apt to damp. Place the box in the Mushroom house, and in a few days the plants will be bleached ready for use. This can be done as often as is necessary to maintain the supply, but the number of plants prepared must be regulated by the demand.

Chicory deserves to be better known, the young growths being very useful as a salad. It should be treated precisely the same as main-crop Carrots. When lifted in autumn the roots must be stored in sand. A number can be placed in the Mushroom house in the same manner as Seakale, and used when 2 or 3 inches long.

Of Lettuce sow seeds in August, and again in mid-September, on a warm rich border, and as soon as large enough prick out into cold frames, the nearer the glass the better. Protect them from frost and give them plenty of air when not raining or freezing. Beware of slugs, and pick off all decayed leaves. All the Year Round is a suitable variety and quite hardy.

Seeds of Celery may be sown in boxes of rich soil in a warm house about the middle of March and again a month later. Place 3 inches of stable manure in a cold frame, tread it firmly, and surface it with 3 inches of rich soil. As soon as the seedlings are large enough prick them out 3 inches apart. Keep the plants close and shaded for a few days, and when growing freely afford abundance of air and moisture at the roots. Never allow the plants to receive a check, and when they are 6 inches high plant in well manured trenches. Subsequent treatment will consist of copious waterings with liquid manure, also taking off side shoots and earthing up for bleaching.—NIL DESPERANDUM.

BANANAS AT HOME AND IN JAMAICA.

IN answer to the appeal of "Nil Desperandum" (page 268), for information on this excellent fruit, I will describe how plants of Musa Cavendishi were treated during 1897 and 1898. They were growing in 12-inch pots in a large stove, and in February were placed in large, well-drained tubs, using a very lumpy and fairly rich loam. The tubs were made by cutting asunder an empty paraffin cask, painting the woodwork green and the hoops black, affixing thereon two strong iron handles, and a better tub for our present purpose cannot be wished for.

The temperature of the house averaged 60° at night, and was allowed to rise to 80°, or even 85°, by day, little air being given. The plants grew very fast, and were assisted with copious supplies of liquid manure. On the 16th of September I observed the fruit spike in the centre of one of the plants, while the other was a fortnight later in making its appearance. Liquid manure was given until the fruits had about three parts grown, and then discontinued, on the advice of a friend (about whom a little will be said later on), his theory being that sufficient nourishment was now contained in the fleshy trunk to supply the needs of the fruits then hanging.

About this time the stalk extension beyond the fruit was removed. The temperature of the stove being likely to fall too low, the plants were removed to an early vinery in January of this year, in a temperature of 55° at night. Here they have remained until the present time, the heat of the vinery being regulated to suit the Vines. The Banana fruits may be observed to change colour almost daily. For the last eight or ten weeks the plants have received little water; it has not been withheld altogether, on the contrary enough has been supplied to keep the roots in a healthy condition.

The fruits will probably be allowed to ripen on the plants. They may, however, be cut at any time now, and hung in a light dry place, when they will be fit for table in ten days or a fortnight. The flavour of these artificially ripened fruits will not be so good as of those ripened naturally, provided a dryish atmosphere be maintained in the house. The time of fruiting depends upon the time the suckers are potted, and in what temperature the plants are afterwards grown. Obviously it takes from

twenty to twenty-four months from the time the sucker pushes through the soil until the fruits are perfected in this country.

And now about my friend. In March, 1897, he arrived in this country from Jamaica, where for some time he had charge of considerable Banana plantations, and the following account of his experience, which he has kindly given to me, I endeavour to convey in my own words.

The suckers are planted 16 to 20 feet apart each way in the month of March, or just before the rainy season commences, and are prepared in the following manner:—The head of each sucker is removed in a slanting direction, making a clean cut, the remaining part of the sucker being 1 foot out of the ground when planted. This is done in order to insure plenty of roots before upward growth commences, otherwise the trunk would be weak and spindly, and the bunches proportionately small. This preparation of the suckers is considered an important thing in Banana cultivation, and is recommended to be practised at all times.

Suckers generally produce fruit fourteen months from the time of planting in their native habitat (that is, in the tropics). The average temperature in Jamaica is 80° Fahr., it seldom goes below 60° at night, while it often attains 120° by day in the shade. The Banana produces two crops each year, and the season of fruiting is determined partially by the cultivator in the judicious removal of suckers; one or two are left to take the place of the parent when fruiting. The first, and best, crop is mostly fit for export in February, and the second crop the following August.

The watering is done by irrigation, and the Chinese are the best irrigators. A plantation will last from three to twenty years, according to the nature and depth of soil, and by careful removal of suckers the rows are maintained fairly discernible. The bunches are supported during the growing season by two stout bamboo stakes placed crosswise under the stalk of the bunch. The fruit extension stalk is not cut off beyond the actual fruit, but is allowed to grow until the fruit is gathered, the old trunk being removed at the same time to give place to the young suckers now well advanced in growth.

The work of gathering begins as soon as the fruits are fully grown, and while they are quite green. Coolie women do most of the gathering and carrying. A strong girl will carry a 1-cwt. bunch of Bananas after it has been placed on her head a distance of 200 or 300 yards from the plantation to the packing shed with ease. The bunches are wrapped carefully in a good quantity of dried Banana leaves, and as soon as a sufficient number has been prepared they are taken immediately to the ship, and arrive in this country in a semi-ripe condition as we see them hanging in our English shop-windows.

The individual fruits are called "fingers," the clusters of fruit "hands." Usually fourteen fingers go to a hand, while it takes nine hands to make a "bunch." A cluster consisting of less than nine hands is not considered good enough for export. A "bunch" of Bananas in Jamaica costs from 1s. 3d. to 1s. 9d. The fruit is eaten by the natives cooked in a green state, and forms one of their chief articles of food.—T. P.

[We congratulate our correspondent on his clear and intelligent description of the culture and exportation of this nutritious tropical fruit.]

RAISING BEDDING FUCHSIAS.

THE culture of Fuchsias is by no means a difficult process. The old plants, lifted in the autumn and potted if started near the glass in the early spring, in a short time produce a splendid lot of young growths. Take these off when they are about 3 inches long, and insert them in either pots or pans, using a mixture of light sandy soil. They root quickly in a frame with bottom heat if damped and shaded on bright days. When rooted I find they do best on a shelf near the glass on the north side of an intermediate house. The plants are soon afterwards carefully separated, and placed singly in small pots, using light sandy soil, and when grown in genial heat soon attain to a good size, and are prepared for planting out in early summer.—PONICA.



HARDY FRUIT GARDEN.

Protecting Fruit Trees in Blossom.—If choice bush and cordon Apples, Pears, Plums, and Cherries can be readily protected when in bloom from the inclemency of sudden frosts, winds, and rain, this should be done. It is possible to provide temporary arrangements which will support tiffany or scrim canvas. Cordons growing against walls may have an arrangement of stout poles placed in the ground in front of the trees, the upper ends resting on the coping. Stretch and secure the protecting material over these. Bush trees should have poles placed round them, meeting together above the trees, where they may be fastened. The material for protection can thus be easily wound round the trees, and as readily removed. Horizontal cordons are conveniently protected by having a light wooden framework ready to place over, on which could be permanently tacked lengths of scrim or tiffany.

Peaches, Nectarines, and Apricots ought still to be protected on cold,

frosty, or stormy nights, continuing until the young fruits are a fair size, and receive the protection of the leaves.

Strawberries.—*Planting.*—There is still time to plant any varieties which have been wintered in nursery beds or bought in late. It is not desirable, however, to allow such late-planted beds to produce fruit, but rather encourage free growth throughout the season, nipping off all flower trusses when they appear. If plants can be lifted and placed in position with plenty of soil attached to their roots, such plants, especially if strong, might bear a small amount of fruit the first season. Weakly plants would be exhausted by this treatment. Allow all, however, to give indications of flowering, as by this means their fruitful character is proved. Those which do not flower the first season seldom do so afterwards, remaining barren, fruitless, and useless. Plant firmly and mulch down each side of rows with littery manure.

Feeding.—Established beds of Strawberries need a little special assistance to stimulate growth. Soot dusted among the plants helps to destroy slugs, and as it becomes washed to the roots affords nutriment which they can appropriate. A dressing of nitrate of soda, 2 lbs. to the rod, given when the weather is fairly dry, is soon absorbed by the soil, and directly used by the plants. As it specially stimulates growth, nitrate of soda ought not to be employed for young plants, which can be sufficiently well nourished by properly prepared soil, and usually grow strongly enough owing to bearing little or no fruit. Those which are benefited most are plants likely to produce heavy crops. Liquid manure may also be given.

Mulching.—The advantages accruing from a mulching of farmyard manure at the present time will be apparent in two ways. First, the soluble parts of the manure will be washed into the soil, assisting the plants to a considerable extent when the crop most requires extra support; second, the insoluble or strawy portions of the dressing, being washed and dried clean by the exposure, afford subsequently a clean bed for the fruit to rest upon when ripening. In order to secure these advantages the manure employed should consist mainly of that from horse stables, composed of equal parts of short manure and nearly fresh long litter, placing the mulching between the rows during this month.

Raspberries.—Remains of the mulching placed between the rows in autumn ought to be raked off the ground now. Lightly point up the surface with a fork, but not deeply, owing to the mass of fibres which ramify near the surface. Deep or careless digging with a spade would sever and destroy these. The effect of mulching regularly is to bring the feeding fibres close to the surface, and frequently the soil is so permeated with them as to render even pointing with a fork difficult to carry out without spoiling some rootlets. In such cases loosening the soil is unnecessary previous to applying a dressing of rich manure around and between the stools.

Newly Planted Fruit Trees.—All trees which have been planted in the course of the previous month require attention in staking and tying to prevent them being moved about by the wind. They should be secured well but not too tightly, either with tarred string or copper wire, but some strong pliable material ought first to be wrapped round the stems to prevent abrasion of the bark.

A mulching of light, not rich and heavy, material will be required on the approach of hot weather to conserve the moisture in the soil. Mulching is not, as in the case of old-established trees, for the purpose of feeding or supplying additional nourishment, but merely to regulate the temperature and moisture. In some soils, either now or shortly, water may be necessary to stimulate root action. A proper mulch applied to moist soil prevents the rooting medium drying too quickly; hence watering will be deferred until there is less danger of lowering the soil temperature.

Another matter of importance is pruning. There are few trees newly planted which do not require some amount of shortening. Shapely, well-formed trees, furnished when planting with abundance of roots, may only require the leading shoots cut back to well-placed wood growths. Others, with few roots and not having the required number of branches, must be more closely pruned, always to wood growths, pointing in the direction the branches are required to extend.

FRUIT FORCING.

Figs.—*Early Forced Trees in Pots.*—Increase the ventilation when the fruit shows signs of ripening, and expose to the sun as much as possible. The drier atmosphere encourages the Fig trees' worst enemy—red spider, and also brown scale; therefore, no effort should be spared to have the foliage clean up to ripening time. Supplies of water are needed through all stages at the roots, yet less when the fruit is ripening than during its swelling. Increase the ventilation at 70°, affording air constantly during the period of ripening. Day temperature 80° to 85° from sun heat, and night temperature 60° to 65°.

Succession Houses.—Trees in inside borders will need abundant supplies of water, and those in narrow borders and carrying heavy crops of fruit require liquid manure, with rich surface dressings. Attend frequently to tying in, thinning, and stopping the shoots at about the fifth leaf of such as are required to form spurs, and avoid overcrowding the growths. Maintain a night temperature after the leaves have become full sized of 60° to 65°, and 70° by day, allowing a rise to 80° or 85° from sun heat, ventilating from 70°, closing at 80°, so as to rise to 85° or 90° afterwards.

Late Houses.—Syringe the trees on fine days sufficiently early to allow of their becoming dry before night. Ventilate freely in the early part of the day, strive to secure solidified growths, and close early in the afternoon

with a fair amount of atmospheric moisture where there is means of excluding frost, but in unheated houses afford moderate moisture only.

Pines.—Carefully avoid a soft, drawn, and weakly growth in young plants in course of preparation for fruiting by dispensing with fire heat as much as possible, relying on sun heat. Maintain the temperature at 60° to 65° at night, and 70° to 75° by day artificially. This is sufficient to sustain the plants in a steady progressive growth. Commence ventilating at 75°, gradually increasing it with the temperature to 85°, keeping it through the day at 85°, 90°, or 95° from sun heat, with abundance of air. Close at 85°, but not so as to greatly raise the temperature. Sprinkle the paths lightly at closing time, and syringe the plants moderately about twice a week. Examine each plant before water is given, and when needed, supply sufficient to moisten the soil down to the drainage.

Fruiting Plants.—Those swelling their fruits are assisted by judicious applications of liquid manure, to be withheld when ripening commences. Stake the fruit to keep it in an erect position. When the suckers of fruiting plants become large enough, screw out the hearts of those not required for stock; one, or at most two, should be retained on a plant. The temperature ought to range in fruiting houses from 70° to 75° at night, and 80° to 95° by day. As the fruit ripens the plants may be removed to a cooler house, and the fruit will then keep sound for a lengthened period.

Vines.—*Early Houses.*—Where the Grapes have commenced colouring, give the border a thorough supply of water where needed, and mulch with rather short material. A little air should be left on constantly, so as to allow of a circulation, and prevent moisture from being condensed on the berries. When the Grapes are fully ripe, only afford sufficient heat to prevent the temperature falling below 60°, maintaining a moderate amount of moisture for the benefit of the foliage. If the weather prove bright, a light shading will assist Hamburgs in retaining colour, allowing moderate lateral extension.

Succession Houses.—Thinning the bunches and berries requires early and close attention, as every surplus bunch or berry kept longer than is necessary to make a selection of the best takes from the ultimate size and finish of those left for the crop. Likewise in disbudding and stopping, every needless growth is only so much wasted energy. It is not good practice to allow more foliage than can have full exposure to light and air. Borders require plenty of water, and weakly Vines improve wonderfully with tepid liquid manure. Avoid, however, a sodden and sour condition of the soil, as this leads to indifferent colouring and shanking.

Vines swelling their crops should have a moist atmosphere, damping the house two or three times a day and at closing time with weak liquid manure. Syringing the Vines, except for special purpose, is best avoided, as the water generally leaves a stain. Admit a little air early, increasing it with the advancing temperature, and maintain it at 80° to 85° through the day from sun heat; close early, so as to raise to 90° or more, and admit a little air at the top of the house before nightfall. This prevents moisture accumulating on the foliage, and is a safeguard against scorching. A temperature of 60° to 65° at night and 70° to 75° by day is sufficient from fire heat.

Late Houses.—The thick-skinned varieties of Grapes are now making rapid progress, and require attention in disbudding. As soon as the best shows of fruit can be distinguished, stop the shoots one or two joints beyond the fruit where the space is limited. Pinch the laterals at the first leaf above the bunch, and remove those below, except from the two lowest joints, which pinch at the first leaf, and sub-laterals also stop to one joint of growth. This treatment is best where the Vines are restricted to space. Where the bearing shoots are a good distance apart it is advisable to let the laterals above the bunch extend two or three joints, or until the space is covered with growths, then keep them well in hand. Close the house early in the afternoon with sun heat, maintain plenty of atmospheric moisture by frequently damping the house, and syringe the Vines at closing time, but not after the bunches show. Bottled Grapes in the fruit room should be examined twice a week for decayed berries, and bottles must be duly supplied with water. Keep the room as cool as possible.

Young Vines allowed to break naturally, and assisted with a little fire heat when the buds have grown about half an inch, make rapid progress; but they need not have a higher temperature than 50° to 55° at night, and 60° to 65° by day after the leaves appear, relying mainly on sun heat, with gentle warmth in the pipes on cold days. Remove all buds except one at each break, retaining the strongest, and leave the shoots about 18 inches apart on both sides of the cane. Crop permanent Vines lightly, but supernumeraries may carry full crops.

A STARLIGHT BOUQUET.—A greater anomaly in combination than that could not at the first glance well be perceived; but it is simple enough when explained, and a substantial fact. It means a new kind of toilet soap, on which Messrs. Lever Brothers of Sunlight fame have long been engaged in perfecting. They tell us the results of their experiments in producing an article of elegance and usefulness have exceeded their most sanguine expectations, and ask us to tell others. The Starlight tablets sent are certainly beautifully finished, firm and glossy, and are beyond question more fragrant than half the bouquets which are made of real flowers. After a trial by an experienced judge, the verdict—short and sweet—was as follows:—"Ornamental, serviceable, and delicious." It is of course open to challenge by all who like to test the matter for themselves.

THE BEE-KEEPER.

SEASONABLE NOTES.

THE month of March is usually noted for the many changes that take place in the weather, and the past month has been no exception to the rule. Fine sunny days were experienced during the first half of the month, the temperature on the whole being high, but though the days were bright they were usually followed by frosty nights. The latter half of the month was boisterous in the extreme. High winds, accompanied by sleet, hail, and snow, kept the bees confined to their hives, and the country had the appearance of mid-winter. The snow, however, soon disappeared under the influence of a higher temperature, and was followed by a downfall of the much needed rain.

The rainfall during the first three months of the year is phenomenal, as only slightly over 2½ inches have been registered. There is much headway to be made up before there is sufficient moisture in the land, but as the barometer is low, and the weather still changeable, there is a prospect of a heavier rainfall during the present month. The frosty nights and cold boisterous storms have had the effect of retarding vegetation. The meadows, which a month ago were as green as they often are in May, are now as brown as at midwinter. This is a fact that should not be lost sight of by bee-keepers, as the bees will require attention for some time to come.

The early blossoming of the fruit trees, which at one time appeared likely, has received the much desired check, and with the exception of the early varieties of Plums, which were fast bursting their fruit buds, nothing in my garden has suffered. Although they were only partly open the bees were hard at work on them during short spells of bright sunshine. Pears are at a standstill, and are not forward enough to have received injury from the late inclement weather. Had it continued fine they would now have been in full bloom, and the first frosty night would have destroyed them, so that they would have been of no benefit to the bees. Apricots, which are usually the first fruit trees to open their blossoms, have not bloomed earlier than usual. The mild winter does not appear to have affected them in the same degree as other fruit trees.

WHENCE POLLEN IS OBTAINED.

It is impossible for bees to increase in numbers without a supply of pollen, either natural or artificial, as it is used in conjunction with honey for feeding the young bees. If pollen can be obtained from a natural source it is decidedly better than the artificial article, which is usually composed of pea, lentil, or even ordinary flour may be used. In the former instance the bees collect it from the various flowers, and it is stored by them either at the time of gathering, or whilst on the wing in what is termed the pollen-basket situated on the third pair of legs. It is surprising the quantity of pollen used in a strong colony during a season. We have little doubt that if it were possible to obtain the weight it would amount to as much as the surplus of honey stored. Bearing this fact in mind, bee-keepers will see the advantage to be derived by having their apiary within easy reach of early midseason and late-flowering pollen-producing plants, shrubs and trees. It is not possible for all to be in this favoured position, still with a little forethought it is possible to assist the bees in this respect by planting suitable kinds for that purpose. When pollen is scarce and the bees are seen to visit the flowers without obtaining any, it is good practice to place a little flour in the flowers, and the bees will take it freely.

POLLEN-PRODUCING FLOWERS.

As has been shown the advantage to be derived by having a good supply of pollen near the apiary, it may be of interest to bee-keepers to know what flowers produce the most pollen at this season. First and foremost we would place the common Palm Willow. It is one of the earliest and best pollen-producing trees known in this country, and will last for several weeks in good condition. All the *Salix* are good for this purpose, but none of the others is as good as this variety, and bloom later in the spring. They are not particular as to position, but, as is well known, they succeed well in a wet situation. The common Box tree is also excellent for the bees, as at the present time they are blooming freely, and are a mass of pollen, on which the bees work. The Box tree does not bloom in a young state. *Pyrus japonica* is a mass of bloom, and is much frequented by the bees.

Among plants may be mentioned *Arabis alpina*, which will grow and flower freely in any dry spot, and should be planted in quantity where it is possible, as the bees work on it freely, and it has the advantage of lasting a long time in bloom. Wallflowers, too, will soon be a mass of bloom, and many other occupants of the flower garden. Fruit trees will doubtless be earlier than usual, so that there will be no lack of flowers for the bees.—AN ENGLISH BEE-KEEPER.



All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **8, Rose Hill Road, Wandsworth, S.W.**, and **NOT** to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Abnormal Calceolaria (F. A. D.).—The flowers are rather prone to change by the suppression of some parts or the multiplication or malformation of others. Your specimen had the moisture extracted from it to such an extent by the cotton wool that it was quite shrivelled. So far as we could comprehend its original character the flower represents a case of both suppression and malformation. There is no accounting for such freaks in flowers.

Ixoras (J. W. T.).—The soil generally employed for these beautiful stove plants consists of about two parts fibrous peat, one each of loam and good leaf soil, with a free sprinkling of bruised charcoal and sharp sand. They require brisk heat and moisture during the growing period, careful watering to maintain healthy root action, and topping with judgment, some requiring a longer time to develop flower trusses than others. More detailed information shall be given in an article, for which we hope you will not have very long to wait.

Asparagus (Young Grower).—You will find that to insure the best results it will be necessary to have the rows at least 18 inches apart, and the plants 15 inches asunder in the rows. The plants should be placed astride a ridge formed by taking out a small trench on both sides of the line at an angle of about 45°, and if the sharp edge is rounded a good seat for the plant is secured, placing it so that the crown will be 2 to 3 inches below the general level. Spread the roots straight in the trenches, cover with soil, and make moderately firm, then place the soil over the crowns. The plants should not be more than two years old, for nothing is gained by planting older; indeed, good one year's plants are the best. The blanching is effected by placing soil from between the rows over the crowns in early spring, which is removed after the cutting is completed, leaving a depth of about 3 inches only.

Canker in Fruit Trees (N. Tavistock).—The subject of canker has been many times and fully discussed, also illustrated, in the *Journal of Horticulture*, of which you are, perhaps, a comparatively modern reader. The active cause of canker in Apple, Pear, and some forest trees, is a fungus, though there is a form caused by a mite. Attacks are induced by the condition of the trees. Those which are in a thoroughly healthy state, root and branch, the wood well fortified by mineral matter gathered from the soil, and the leaves clear and stout, through development under direct exposure to the sun—such trees are not prone to canker. Very old trees may be said to canker because they are old, and have long since abstracted the requisite nutriment from the soil. When young trees canker they are either in an ill-fed debilitated state, or in a gross succulent condition—plethoric, through the roots penetrating a deep and, perhaps, wet medium, deficient in the constituents which are essential to sound growth. Succulent stems are injured by frost, though the scar at first may be unobserved, yet shrinkage occurs, and the fungus spores find entrance. With a multitude of fibrous roots permeating the upper layer of soil, and this containing phosphates, potash, and lime, kept moist in summer by a covering of manure, trees are seldom infested with canker. Prevention rests in sound cultural methods. Remedial measures must be in accordance with actual state of the infected trees. If growing robustly they may require root-pruning, if enfeebled need generous root nourishment, and the affected plants dressed with paraffin emulsion or Stockholm tar. A clear description is requisite of particular trees—their probable age, character of growth, weak or strong, with an indication of the nature of the soil and site in which they are growing,

for the purpose of giving advice that would be applicable under the circumstances.

Red Spider on Early Forced Vines (Journeyman).—Red spider generally appears more or less on all early forced Vines. Thoroughly cleansing the house and removing the loose surface soil prevents a large amount of after trouble. After trying almost everything, we have found nothing comparable with an insecticide containing soap, applied at a safe strength on the first appearance of the pest, with a brush or sponge. Sulphur applied to the hot-water pipes heated to 170° or more, gives off fumes that annihilate red spider, white fly, and spores of fungi, but sometimes injure the tender skins of Grapes, and therefore sulphur must be used with care. Plenty of liquid manure at the roots, with due supplies of atmospheric moisture arising from light mulchings of sweetened horse droppings, are inimical to red spider.

Calla Leaf Spotted (W. W.).—The very fine leaves, barring the brown spots round the edge here and there, and the minute white specks over the surface, account for the production of the splendid spathes. There is no disease in the leaf, and yet we find no trace of their presence, or of their having been there, beyond the minute silvery marks which occur on the common Arum leaves very decisively, and have been referred to as occasioned by oxalate of lime. We have found the mixing of a little air-slaked best chalk lime with the soil, about 2½ per cent., to counteract the tendency, probably due to organic acid in the soil. The discolouration and shrinkage are due to moisture resting on the parts affected, not necessarily from being placed thereon, but in consequence of the parts being in contact with other leaves, though it may occur without either by transpiration in consequence of the vigour, this moisture hanging on certain parts, and causing the destruction of the tissues. We have found a little air constantly, thus allowing of both transpiration and the evaporation of the moisture, the best, if not only, preventive. It is hardly possible to grow the plants without such brown spots under ordinary circumstances, but we have had to produce them without spot on leaf, and found nothing serve so well as the "crack" of air constantly. Care must also be taken in handling the plants, as the least bruise on a young leaf edge develops into a brown patch on the margin by the time the spathes are perfected. We are obliged for the charming Roses.

Sir Watkin Narcissus Bulbs Diseased (G. C.).—We found two forms of "grubs" on the moist parts of the bulbs, but they were considerably dried in consequence of your misdirection of the parcel. It was despatched on March 28th, but did not reach us until nearly midnight on Saturday, April 2nd. The creatures were in the decayed scales, and are—1, a small white worm of the family Enchytræidæ, quarter-inch in length, and, viewed under a pocket lens, white or silvery in appearance; it has thirty segments, and of setæ (bristles) two or three per bundle. The name of Enchytræus argenteus, Mich., was given to it on account of its silver colour, and though commonly regarded as a saphrophyte certainly leads a parasitic mode of life, attacking various outdoor plants, such as Asters (causing them to wither suddenly when coming into flower), Mignonette, and various bulbs. We have also found it in the decayed parts of several plants grown under glass. It appears to cause the decay of the living bulb scales by working in the dead ones, and from these passing to the parts beneath, already browned and injured by contact. We have not found it in living tissue, but its action between the bulb scales is unquestionably the cause of the decay. 2, A small, dirty yellowish-white grub, three-sixteenths of an inch long, with a black or dark brown head and dark brown caudal segments, legless, but with small hairs or bristles on the segments. It is the larvæ of the St. Mark's fly (Bibio Marci), often very destructive to the roots of various garden plants, especially Ranunculi and Narcissi. We have found several hundreds at the roots or bulbs of Daffodils. The fly generally appears about St. Mark's Day. The larvæ of the insect chiefly live on decayed matter, but on bulbs work between the scales and set up decay, speedily destroying the bulbs or great part of them. The fly is a very curious two-winged creature, and very active, the female having an ovipositor, and uses it for depositing eggs in the crowns of the bulbs, even entering cracks in the soil to get at them. The larvæ hatching work their way in the decaying scales, and by the ferment cause the decay of living matter, thus providing themselves with available nutrition similar to maggots in the living flesh of sheep, and also allied species in the tissues of plants. You ask for a preventive and remedy. We have found three more or less effectual. 1, Fir tree oil insecticide, following the instructions. 2, Soluble petroleum made by dissolving 1½ lb. of softsoap by boiling in a gallon of water, then whilst hot, but removing from the fire for safety, adding three wineglassfuls of paraffin oil, and stirring briskly until amalgamated. This is diluted to 12 gallons with hot water, and applied when cool enough by means of a rose watering-can to the ground, previously loosened at the surface to prevent running off, and using 1 gallon per square yard. 3, Little's soluble phenyle, a wineglassful to 3 gallons of water, applying in the same way as 2. The latter gave the best results as regards after growth—1 in 240 fluid measure did not injure the Narcissus foliage, which is smooth, hence not, like Cucumber and Tomato leafage, easily injured. Any of the three will kill both the "whiteworm" and the "grub," if these are reached. The following chemical fertiliser is also advised:—Bone superphosphate, dry and crumbly, 5 parts; muriate of potash, 80 per cent. purity, 3 parts; and sulphate of ammonia 2 parts, mixed, 4 ozs. being used per square yard over the whole surface of the beds when the foliage is dying down. The mixture must not be used over growing plants, and if the bulbs are very near the surface (ours were 4 inches deep) only half of the mixture may be applied at one time. There is no waste of the fertilising substances if pointed in lightly, but if rain follow soon after the dressing there is no need of pointing in.

Destroying Woodlice (Novice).—You will find it an excellent plan to get some old boards, sprinkle one laid on the floor or bed with a little oatmeal or crumbs of a floury boiled Potato, and another board of the same size placed upon it, with a small stone at one or both ends, so as to keep the board sufficiently far from the lower one as to admit the woodlice. The vermin will soon find out the food, when it is a matter only of removing the pebbles and crushing the woodlice between the boards. Some persons use the old boards only, which, partly decayed, attract the woodlice, and they are swept into boiling water, or it can be poured on the boards. We have seen thousands destroyed in the manner indicated.

Echeveria retusa (J. W. W.).—This plant is very useful for winter flowering. Easily increased and cultivated it occupies a place amongst the best of market plants in winter. The flowers are bell-shaped, much larger than *E. secunda*; orange red, very bright and rich outside, the inner surface being yellow. They are borne in a two-branched inflorescence at the extremity of the stem, the two branches curling slightly downwards. Plants in 5-inch pots are most useful and produce several flowering stems, the blooms lasting for a considerable time in good condition. A rich light loam and well drained pots are needed to insure success, and plants are best prepared by growing them out of doors during the summer, lifting and potting them in the autumn, when they can be transferred to the conservatory or greenhouse. The species was found by Mr. Hartweg growing on rocks near Auganguco, Mexico, and was first received from him by the Royal Horticultural Society in 1846.

Luculia gratissima (A. W. P.).—The culture of this fragrant flowered plant is very simple, but it is averse to a superabundance of water or the least approach to stagnation at the roots or in the atmosphere. Therefore a porous soil must be provided, composed of loam, peat, leaf soil, sand, and a few pieces of charcoal, thoroughly incorporated; and whether the plant be in a pot or a border the drainage must be well attended to. When growing freely, or about to flower, weak liquid manure may be occasionally supplied with advantage. Propagation is effected by taking cuttings of the young firm wood, with a heel of the old wood attached, and inserting them in similar soil to that already described, employing rather more sand. They should be placed near the sides of the pots, the latter being plunged in good bottom heat and covered with a bell-glass. When the cuttings are rooted shake them out carefully, and pot them singly in thumb or 3-inch pots, afterwards increasing the root-room as the plants advance in growth, but being careful not to overpot them. When thoroughly established they may be grown in any cool or intermediate house where the temperature is not allowed to fall much below 50° at night at any period of the year.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (W. Taylor).—If the seeds sent from India resembled small dark Sweet Peas, but much harder, the plant is undoubtedly an inferior form of *Canna*. It is popularly called Indian Shot, from the purpose to which the seed has been put by natives of India. (S. C.).—1, *Cornus mascula*; 2, *Asclepias curassavica*; 3, dead. (T. J. R.).—1, *Rhododendron hirsutum*; 2, *Erica codonodes*; 3, *Berberis aristata*; 4, *B. Darwini*. (Amateur).—1, *Asplenium bulbiferum*; 2, *Adiantum pedatum*; 3, *Selaginella Kraussiana*. (F. P.).—1, *Dendrobium Fortunei*; 2, *Lycaste Harrisoni*. (J. R.).—1, *Cydonia (Pyrus) japonica*; 2, *Medicago lupulina*; 3, *Sedum azoideum variegatum*; 4, *Abutilon vexillarium*; 5, specimen insufficient, send when in flower. (M. J. S.).—1, A good form of *Odontoglossum crispum*; 2, *Vanda suavis*; 3, *Odontoglossum triumphans*. (E. G.).—*Bifrenaria (Lycaste) Harrisoni*, an exceptionally good form. (B. B.).—*Iris japonica*, synonyms *I. fimbriata* and *I. chinensis*.

COVENT GARDEN MARKET.—APRIL 6TH.

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	6 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzonera, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, l. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1 6	to 4 0	Grapes, lb. ...	2 0	to 3 0
Cobs ...	21 0	22 6	Lemons, case ...	11 0	14 0
Filberts, 100 lbs. ...	0 0	0 0	St. Michael's Pines, each	2 6	5 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ferns, small, 100 ...	4 0	to 8 0
Aspidistra, doz. ...	18 0	36 0	Ficus elastica, each ...	1 0	7 0
Aspidistra, specimen ...	5 0	10 6	Foliage plants, var., each	1 0	5 0
Azalea, per doz. ...	24 0	36 0	Hyacinths, doz. pots ...	8 0	12 0
Cineraria, per doz. ...	6 0	9 0	Lilium Harrisii, doz. ...	12 0	18 0
Cyclamen, per doz. ...	9 0	18 0	Lycopodiums, doz. ...	4 0	6 0
Dracæna, var., doz. ...	12 0	30 0	Marguerite Daisy, doz. ...	6 0	9 0
Dracæna viridis, doz. ...	9 0	18 0	Mignonette, doz. ...	6 0	12 0
Erica hyemalis, per doz. ...	9 0	15 0	Myrtles, doz. ...	6 0	9 0
„ gracilis, per doz. ...	6 0	9 0	Palms, in var., each ...	1 0	15 0
„ various, per doz. ...	8 0	12 0	„ specimens ...	21 0	63 0
Euonymus, var., doz. ...	6 0	18 0	Pelargoniums, scarlet, doz.	4 0	6 0
Evergreens, var., doz. ...	4 0	18 0	Tulips, various, doz. bulbs	0 9	1 6
Ferns, var., doz. ...	4 0	18 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2 0	to 4 0	Maidenbair Fern, dozen		
Arum Lilies, 12 blooms ...	5 0	6 0	„ bunches ...	6 0	to 8 0
Asparagus, Fern, bunch ...	2 0	4 0	Mignonette, doz. bnchs. ...	2 0	4 0
Azalea, dozen sprays ...	0 6	1 0	Narciss, white (French)		
Bouvardias, bunch ...	0 6	0 9	„ dozen bunches ...	2 6	5 0
Carnations, 12 blooms ...	1 0	3 0	Orchids, var., doz. blooms	1 6	12 0
Daffodils, doz. bunches ...	6 0	8 0	Pelargoniums, doz. bnchs.	6 0	9 0
Eucharis, doz. ...	4 0	6 0	Roses (indoor), doz. ...	3 0	5 0
Euphorbia jacquiniæflora,			„ Red, per doz. ...	3 0	5 0
per bunch ...	1 0	2 0	„ Tea, white, dozen ...	1 0	2 0
Gardenias, doz. ...	2 0	4 0	„ Yellow, doz. (Perles)	1 6	4 0
Geranium, scarlet, dozen			„ Safrano (English), doz.	1 0	2 0
bunches ...	6 0	8 0	„ Pink, dozen ...	4 0	8 0
Hyacinths (Roman) dozen			Smilax, bunch ...	2 0	3 0
bunches ...	4 0	6 0	Tulips, dozen blooms ...	0 6	1 0
Lilac (French), bunch ...	3 6	4 0	Violets, dozen bunches ...	0 6	1 0
Lilium longiflorum, 12 blms	4 0	6 0	„ Parme (French),		
Lily of the Valley, 12 sprays	0 9	1 3	„ bunch ...	3 0	4 0
Marguerites, doz. bunches	3 0	4 0	Wallflowers, doz. bnchs. ...	5 0	6 0



THE FARMER AS A CITIZEN.

THIS is not going to be an agricultural paper, so we warn those readers who only care for agriculture pure and simple of what this week they may expect. Our farmers form a considerable class, and in the rural districts find that if they would do their duty to their neighbours they must take upon themselves many offices outside their own work. "Outside" is perhaps a wrong word to use here, for nothing can be outside their own work that bears on rural economics. We know there are men who shirk their responsibilities, and men who do that on the plea of urgent home work are usually those who are slack even in that work.

The busiest man is the man of the most leisure, and is the man who is always ready to help lame dogs over stiles, while he manages to get his own work done well and in good time.

Take an ordinary English village in a Wheat-growing district; the farms vary from 200 to 600 acres, and are held by an aged farmer a little out of date; his son, is far readier to find fault than to help in any scheme of amendment; a man who ought to take a lead in the parish, but is of an indolent turn, and owing to family difficulties has placed himself rather out of things; another risen from the ranks, but born before education, even in its rudimentary branches, was considered a necessity; another holding with his farm a licensed house; a young man of promise who is at present troubled with natural shyness; and another who practically does all the work of the parish at home and abroad.

The duties of this man would be much lighter if he could persuade some of his neighbours to take office with him, but by common consent they look to him to see them through all difficulties.

Of what does parish work consist? That is a wide question, and varies according to the parish. We may reasonably begin with education. In the villages there are few Board schools. The schools are voluntary, with a board of managers—probably the squire or parson is chairman. In some cases there is no resident squire, and the parson, good man though he may be, has no notion whatever of business. There is a great deal of routine business to be done—i.e., of a clerical nature—and difficulties are constantly cropping up, if not with the head master, with some of his subordinates. A well-managed school is an admirable institution—master, scholars, and ratepayers all receiving the maximum of benefit. Then, again, we may reckon with the new technical education. A leading spirit is necessary here to plead wants and requirements before a central board, and to plan work at home.

This must involve at least four meetings yearly at the central offices, to say nothing of meetings in the village. Most villages have a sanitary board; this is, however, usually merged in the Parish Council. Now, there has been a movement on the part of farmers to ignore these Parish Councils, and to hold themselves aloof. This is neither wise nor prudent. Granted that the powers of the P.C. are happily limited; yet it is well that those limited powers be used to the best end. We have no wish to decry the mute, inglorious Milton, or the village Hampden; but we do wish sometimes they had a little better notion of business procedure, and would not waste valuable time in useless, aimless discussion.

A good, popular farmer is certain of election as chairman to such a body, and he can by tact and management prevent the whole thing becoming a farce. Then there is the office of overseer of the poor—this does not carry great responsibilities, but there is work which it is necessary to perform in a business-like manner. Where a good farmer shines is on the District Council, but he must have a good stomach for work, and infinite patience. He is not only guardian of the poor, but also guardian of the rates. He remembers that while the poor in receipt of parish pay are in no enviable position, there are many ratepayers who have a terrible struggle to make ends meet, and present a decent appearance to the world at large. Their pockets should be as sacred to him as the comfort of the pauper.

Unless a man has been in office and has proved himself of good business habits, he little knows what work may be put upon his shoulders. Once a fortnight is board day, when the work of the different parishes in the Union is considered. Once a fortnight is held the rural district meeting, which deals with highways and manifold business. We saw an agenda paper yesterday with twenty items for consideration—some, of course, are dismissed in a minute or two, others are long and tiresome questions. Assessment meetings are no sinecure, but members of that committee are only (or ought only to be) picked men. The questions brought before them are so wide and so far-reaching, and involve so many interests, that it is only capable men who stand a chance of doing the business properly. Then for other meetings; who attends finance committees, educational questions, boarding out, and house visitations?

We know of men who never all the year round escape a single week, and who to their credit attend with amazing regularity. Barren honour is all they get, and we fear often a bit of abuse. Of course there are some minds who thoroughly enjoy all business details, but even with them the flesh must often be weary. Sir Edmund Verney, in an article in a March magazine, fairly abuses the farmer for frequenting so many markets. He either does not know or is wilfully ignorant as to who attends to all these details of local government.

We have an instance of one farmer who was for years chairman of a board of guardians in his union. Ten miles in, ten miles out every Wednesday, fair weather or foul, and on those days he had no opportunity for doing his own business, as his union town presented no facilities for transaction of business, and so every Saturday he had another ten miles' drive in an opposite direction.

Most farmers, too, are expected to take an interest in the local affairs, and so forth; and if the individual farmer does not benefit

personally he cheerfully works in the interests of others. We have said nothing of any political organisations, but as they exist all through the country the farmer must of needs be associated more or less with some working committees.

WORK ON THE HOME FARM.

We have often to repeat ourselves; but new readers require the information, and old ones sometimes forget. After this bitter blast warm bright days are sure to follow, and it is well to look over young stock—i.e., calves in boxes or pens. In cold weather these animals need good, rich food; but as soon as the weather changes, unless the diet be restricted, the calf will do too well, and may probably fall a victim to black-leg. Remember, it is the best animal that first succumbs. A change to the open yard and plain food will do away with any risk.

Foaling mares should be carefully watched. Gently worked exercise is fine to keep them in healthy condition.

If the land (arable) be too wet to allow of horses on it, it is not a bad plan to brush-harrow grass fields, and possibly there will never be a "slacker" time. Some of us have still a few Turnips left, and the hogs are getting fat and heavy. It is an annoying thing to find in the morning in the fold a good hogg "over cast," and drawing its last breath. A visit by lantern light is a wise precaution. It is advisable now to sow a few Tares, one of the most valuable of fodder crops.

Wheat or Oat stubble is the proper course, and to get a good plant use plenty of well decayed fold-yard manure—say at least twelve loads per acre. "Thousand-heads" as autumn food for lambs might now be sown. Lambs find a good deal of difference between a well ripened plant and one that is immature, and it does not do to keep them waiting till their food is ready. Here, again, plenty of manure and phosphate of lime on a deep cool soil are a desideratum.

We may now reasonably hope for a better butter supply. The shepherd, having put his lambs fairly under weigh, is not requiring so much new milk to supplement that of the ewes as he did during last week's cold and storm.

SUGAR-BEET GROWING IN ENGLAND.

THE attention of agriculturists in many parts of the country has been recently again directed to the question of the cultivation of sugar-Beet. In the course of a letter just addressed to the Central Chamber of Agriculture, the Board of Agriculture stated that they "do not consider they would be justified in proposing to the Treasury that they themselves should institute any further experiments with regard to the cultivation of sugar-Beet; but if the Council think it advantageous at the present time to encourage those agriculturists to do so who can afford to take the risk of sowing small areas, the Board would be willing to co-operate with the Council so far as to place the services of their officers at the disposal of the Council, with a view to the preparation of a model form for recording the various details connected with such experimental growth, although the season is probably now too far advanced for any material changes to be made in the scope and character of the experiments which are to be instituted during the current year. At a later stage the Board would also be willing to consider whether they could properly afford the Council any assistance in bringing the results of any new experiments to the knowledge of agriculturists generally."

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1898. March and April.		Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun	On Grass	
		inchs	deg.	deg.		deg.	deg.	deg.	deg.	inchs.	
Sunday	27	29.431	37.3	37.0	N. E.	38.3	43.2	34.0	63.6	32.2	0.158
Monday	28	29.429	37.0	36.0	N.	38.7	44.0	34.2	67.9	31.6	0.010
Tuesday	29	29.483	40.1	37.6	W.	39.1	47.2	35.8	77.5	33.4	—
Wednesday	30	29.548	38.9	37.0	W.	39.0	51.4	27.0	78.9	23.9	—
Thursday	31	29.737	45.4	41.5	N. E.	39.2	51.9	37.4	91.1	30.8	—
Friday	1	29.932	35.8	35.6	N.	39.7	51.6	33.1	81.8	26.8	—
Saturday	2	29.832	41.7	39.3	N. W.	40.1	54.3	35.8	98.9	28.3	—
		29.627	39.5	37.7		39.2	49.1	33.9	80.0	29.6	0.168

REMARKS.

27th.—Overcast, with almost continuous rain or drizzle till 5 P.M.; dull and damp after.
 28th.—Dull and drizzly early; overcast day, but a gleam of sun at 1 P.M.
 29th.—A few spots of rain in afternoon, but generally fine, with a good deal of sunshine.
 30th.—Fog early, and frequently hazy during the day, but sunshine almost throughout; fine night.
 31st.—Bright sunshine almost throughout.
 1st.—A little fog early; bright sun all morning, and generally in afternoon.
 2nd.—Fine and generally sunny.
 Warmer towards the close, and on the whole nearly an average week, but rain still deficient.—G. J. SYMONS

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Journal of Horticulture.

THURSDAY, APRIL 14, 1898.

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MISMANAGED FRUIT BORDERS.

IF borders are constantly mismanaged, it is not to be expected that trees rooting in them will long remain in a fruitful condition. Unfortunately no hard and fast lines can be laid down as to the proper treatment of fruit borders, so much depending on circumstances. At the same time some instruction has to be given, more especially as to when to water or to apply liquid manure; but amateurs do not seem to thoroughly understand what is meant, with the result in some cases of neglecting to attend to these important details altogether, while others not infrequently do too much watering and too little thinking, their crops not being a complete success accordingly.

From the commencement to the end of the year's working—that is to say, the production and maturation of crops and wood—the borders ought never to be found in a dry crumbling state. Treat the borders exactly the same as the soil, supporting the roots of Vines in pots, and no mistake will be made. When the soil is approaching dryness is the time to water, no matter at what stage of growth the Vines or other fruit trees may be. Caught at the right time comparatively little water is sufficient to well moisten the soil, but if neglected till the border becomes quite dry it will be found a very difficult matter to properly remoisten it, added to which many root fibres will have perished, and progress will be unsatisfactory. I do not agree with those growers who point with pride to the water passing out of the drains connected with inside fruit borders, for I am of opinion that if the borders are watered at the right time they can be properly moistened without the drains being brought into requisition at all. This I have repeatedly proved in bygone years, and at the present time neither the Vine nor Peach borders that are doing me good service have any more drainage than was afforded when corn was grown on the same land. What will happen when the roots have reached the subsoil? would be a fair question, and which I will anticipate. Is it so very certain that the roots will find their way to the subsoil to any great extent? My aim is to make

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things agreeable near the surface, and if any roots forsake good living for a cold berth and slow death, let them do so.

We may easily err in putting off watering too long, and also in being in too great a hurry to apply moisture to the roots. Occasionally, what may appear a somewhat light soil may hold water like a sponge, and unless very carefully treated becomes sour and injurious to the roots. When Vine leaves present a sickly appearance the probable cause is an excess of water at the roots. I would rather see them a bluish green colour, owing to dryness of the border, than yellow from stagnation, the former recovering quickly when the remedy is applied, but not so the over-watered Vines. It is far from my wish to frighten the inexperienced. On the contrary, I am writing with a view to inducing them to act and think for themselves, adopting common sense, not rule of the thumb, practices.

The poorer the borders the greater the need for watering often. At the same time I do not believe in constantly drenching the soil with water, which may or may not be lower in temperature than the border, if it can be avoided. Timely top-dressings with rich compost, followed by a mulching of strawy manure, will save the hose or watering-pot considerably, and both ought to be applied annually. Not a few inside borders have to serve as floors of houses, and I have seen scores of them as hard and apparently as dry as a road. The firmness of border is not so very objectionable, always provided the soil can be kept moist. Root fibres innumerable are formed in firm, moist, and not too poor ground, the loose rich root-run favouring the production of long fibreless roots. It is not yet too late to take a neglected inside border in hand. If roots are to be found remove the dry, hard surface soil down to these, leaving the ground loose and level on the surface to facilitate the next operation of well moistening the whole of the reserved portion of the border. The following day apply a top-dressing of loam, manure, burnt earth, ashes, fine mortar rubbish, and a sprinkling of bonemeal. If only a few half-dead roots are found not far away from the stems, prune them and relay in fresh compost. Mulch with strawy manure or peat moss litter not too fresh from the stable. Keep the old and new soil uniformly moist, and the chances are roots will soon be attracted to the surface. Pure fresh leaf soil and also the residue from a slow garden fire are likewise root-inducing, and may be used for mulching or top-dressing with advantage.

We may reasonably assume that few borders are in the plight just indicated, but there are many which are mismanaged, if in a lesser degree. Some cultivators are decidedly averse to the use of a fork on a border. What if a few surface roots are broken occasionally? The good done by loosening a hard surface occasionally more than compensates for any little temporary damage done to the roots, and as a matter of fact it is scarcely possible to thoroughly moisten a somewhat dry border unless the surface is loosened prior to the application. Then obviously manures are wasted on hard surfaces, the greater portion of each dressing being washed away.

This brings me to another portion of my subject—viz., the application of manure to fruit borders under glass generally, much of the foregoing applying to Peach, Fig, Cherry, and other borders with the same force as it does to those occupied by Vine roots. Surface dressings of slowly dissolving chemical manures are doubtless of service, and I have good reason to speak highly of some of the special Vine manures that have long been in commerce, but for real effectiveness commend me to liquid manure in a weak state—little and often is my motto. The roots are incapable of appropriating large quantities of anything other than nearly clear water, and may easily be injured by an overdose of manure. Large numbers of fruit borders are too rich already, this remark applying with the greatest force to the Vine borders on which so much labour and expense have been expended, and if these are watered and manured to excess they soon become distasteful to the roots. With manuring as with watering no rules can be laid down that apply to all borders alike, and much must be left to the judgment of individuals.

Worn-out old borders and the poorer new ones are naturally the least capable of supporting Vines or trees in their efforts to produce heavy crops of fruit, and it is all such that should have the most

assistance in the form of liquid manure, additional to the rich top-dressings already recommended. Instead of waiting till the crops are well advanced towards maturity, feeding at the roots should commence in the case of poor borders from the first. Liquid manure may be safely and effectively applied in a moderately strong state before the roots are active, and weaker nearly every time the borders require moistening afterwards.

When the crops are about fit to gather harm might result from an application of liquid manure to the roots, but directly they are cleared off, or while the foliage continues to perform its natural functions, liquid manure may be applied with advantage. Thus treated trees and Vines have their strength more or less recuperated, and are likely to remain highly profitable for many years in succession.—W. IGGULDEN.

HINTS ON TOMATO CULTURE.

TOMATOES are readily raised from seeds, which are best sown during March in pots or pans not too thickly. Most cultivators perceive the necessity of securing strong seedlings, and therefore do not err in crowding them unduly. They require to develop in the seed pots until rough leaves commence to appear. It is then time to place each either in a small pot or four round the edges of 3-inch pots, in order that they may strengthen and form roots freely. The stems of the seedlings should be sunk low in the soil. The next move must be to single pots, again sinking the plants as low as possible. This is an important means of keeping them dwarf and sturdy until potting or planting finally. The last-sized pot before the latter operation is carried out should be 5-inch, this being most convenient in every way.

It is essential that the plants be kept on dry and airy shelves in a position close to the glass in a greenhouse or frames, as attempts to hurry growth in heat, moisture, and shade will produce unsatisfactory plants. Abundant light and air constitute the two main requirements, and must be provided and continued in every stage of growth. As the plants advance in size it will be evident that strict attention should be given as regards water, so that they do not suffer; and it may be necessary to examine them twice or thrice daily when the soil becomes well permeated with roots. It is also essential to carry out the potting firmly, thus inducing roots, fibrous in character and plentiful in quantity, instead of being coarse, strong, and less numerous. The latter induces growth of a strong but succulent nature, the former promotes equally strong but sturdy and short-jointed growth. Flower trusses may commence to form before the final potting, but this signifies little, even if fruit forms.

For fruiting in pots 11 and 12-inch size pots are the best. Place a few crocks over the drainage holes and cover with pieces of substantial turf, lightly dusted with soot. The compost should be of a substantial holding nature rather than rich and light. Use turfy loam four parts to one part decayed manure. Should the loam be poor, add a sprinkling of bonemeal and wood ashes, mixing all well together. If turfy loam is not procurable employ that with little or no fibre, insuring its porosity by freely intermixing some powdered brick. Good vegetable soil may also be used with successful results. In potting place very little soil in the pots before introducing the plants, which ought to be well furnished with roots, but not badly pot-bound; in fact, they ought to be in such a condition that a shift into larger pots is desirable in any case. Place the soil around in layers, making each firm with a potting stick before adding more.

The compost as well as the ball of roots ought to be neither wet nor dry, but in an intermediate state of moisture. Should the soil and the roots be too dry it will be a difficult matter to properly moisten them after the potting is completed without saturating the fresh compost to an extent which may cause sourness before the new roots can enter it. On the other hand, the sufficiently moist ball of roots and compost being favourable to quick root action, this is soon evident. Add no more soil than will just cover the ball half an inch. Firm potting at this last shift is very desirable. A large amount of material can be compressed in a small space when rammed down, and as this method of potting acts well with Tomatoes, favouring short-jointed growth and fruitfulness, it must not be omitted. A very important reason for having the soil in a moist condition is that water will not be needed for a short time, but of course much depends upon position and weather. The soil and roots must not become too dry, however, before applying sufficient to moisten the whole.

As soon as growth commences, the shoots, which quickly spring from the axils of the leaves, ought to be rubbed out, continuing to do so as they appear on the extended growth. Confine each plant to one

main stem, and either train upright to a stake or to a wire under the roof of a lean-to or span structure.

Cultivating Tomatoes in pots requires that the attention given be very regular, and that growth takes place in the full sunshine near the glass as far as practicable. When the nutriment in the soil has been freely extracted by the mass of roots, top-dressings of soil of a rich character must be applied, this being done as often as roots appear on the surface, and the pots admit of the soil. When this is not conveniently practicable, additional sustenance can be afforded by applications of liquid manure, also sprinklings of artificials, washing the latter in with clear water. Much may be done by systematic feeding to continue the extension of the plants, the setting and swelling of the young fruit at the same time that the advanced part of a heavy crop is being brought to perfection.—E. D. S.

VEGETABLES FOR HOME AND EXHIBITION.

KALES.

THOUGH Borecoles do not come within the exhibitor's category to the same extent as others previously mentioned, they are indispensable in any garden, whether large or small. Hardy in character and robust in habit, all that Kale requires is a fairly retentive soil, an adequate supply of manure, and a sufficiently long season of growth to insure sturdy maturity before severe weather sets in. Success lies chiefly in having strong healthy plants ready to take the place of early crops as ground becomes vacant. There are few gardens in which space can be kept purposely for this crop, nor is it necessary if care and judgment be exercised.

Gardeners must be always looking ahead, and with winter greens it is a mistake to delay the sowing till the ground is ready to receive the plants, by which time is lost, as they are only attaining to planting size in the seed beds when they should be establishing themselves in permanent quarters. On the other hand, it is an error to begin too soon, or the plants are liable to be spoilt through overcrowding in the seed bed whilst waiting for the vacancy they are intended to fill. Fortunately Kales are more accommodating than some other green vegetables, and do not suffer to the same extent from the latter cause, yet thin sowing and prompt removals are golden rules, and if the best results are desired they must be closely adhered to.

Generally speaking two sowings of this crop are sufficient for the requirements of most gardens, the first to be made about the middle of March, and the second in April, though the exact dates are determined by locality. Previous notes on the sowing of green vegetables are applicable to Kales, and the scattering of wood ashes in the seed bed acts as a preventive against root troubles. Forethought is necessary in transplanting, and the earliest plants, if ground be vacant, should be removed in June. As Kales remain longer on the ground than other winter greens, planting in the most favourable positions that will be wanted early in the spring for other crops should be avoided, otherwise the plants have to be pulled up at the time when they are most useful. In small gardens where it is necessary to economise space, it is advisable to plant Kale and other winter greens between rows of second early Potatoes. In order to be successful in this method a variety of somewhat dwarf close habit should be chosen, and the rows of Potatoes must be 30 inches or a yard apart. Though it is preferable to plant in showery weather, Kales are of such a tenacious character that even in the driest weather they rarely fail to start if water is applied after planting. All plants should be in their permanent quarters by the middle of July, because if left till later they have little chance of becoming established before the advent of winter.

Variegated Kale is sometimes grown for decorative purposes, and the tinted forms in conjunction with the natural curl of the foliage find favour in some places. Asparagus Kale is probably the first of the family in point of flavour. It is very hardy, and produces a profusion of sprouts which in the late winter and early spring are very acceptable. The next two for quality are the Cottager's Kale and Dwarf Green Curled. The hearting or cabbaging Kale is a useful variety, producing Cabbage-like heads. There are several other varieties of long standing, and of taller and more robust habit, which may be grown if quantity is the prime consideration; but where quality is first looked for, as it should be, then the dwarf compact growing kinds, such as those mentioned, are the best to grow.

Another vegetable belonging to this section is the Kohl Rabi, which is generally of more interest to the farmer than the gardener. It has been many times recommended as excellent for table, but the plant has made little headway as a garden vegetable. There is no difficulty about its cultivation, and if sown in March and transplanted in June its requirements are few, and at some tables the young fleshy Turnip-like stems are appreciated.

Kale is sometimes exhibited in collections when other vegetables are getting scarce, and for this purpose whole stems of a close-growing

compact variety are the best. It is not as an exhibition vegetable that the Kale is dwelt upon in the foregoing notes, but rather to remind growers of the attention that is needed for the welfare of one of the most useful of winter greens.—GROWER AND JUDGE.

ALLAMANDAS AND THEIR CULTURE.

THE species and varieties of the genus *Allamanda* (so named in memory of Dr. Allamand of Leyden, who first communicated seeds of this genus to Linnaeus) are elegant (so called) climbing evergreen stove plants. Not any of the species or varieties, however, possess means of climbing—neither tendrils nor stem appendages giving them claim to the title, hence it rests solely on the freedom of growth of the shoots. Besides, at least one—namely, *A. nerifolia*, is a shrub. More, all *Allamandas* are naturally (or so grown as to be semi-evergreen, or practically) deciduous.

Allamandas are of comparatively easy culture. *A. Chelsoni*, *A. Hendersoni*, *A. nobilis*, and *A. Schottii*, with *A. cathartica* and *A. Wardleana*, if variety be wanted, trained to roof trellises fixed 6 to 9 inches from the glass, are gorgeous by the beauty of their foliage and flowers during the summer months. Trained so that the shoots have full access to the light, crowding being avoided and the growths kept from touching the glass by timely attention to tying loosely to the wires of the trellis, the plants produce flowers of great substance in vast profusion, which for cutting purposes are most valuable. The flowers, however, do not last long in a cut state, yet sufficient for table decoration, and an *Allamanda* table, with a setting of their own foliage in contrast with hard-grown *Adiantum cuneatum*, can hardly be excelled. If not wanted for such purpose as temporary decoration, the shoots may be allowed to ramble in a somewhat natural manner, and thus seen more or less depending in a rather thinly disposed manner, *Allamandas* in full floral array present a unique appearance.

The flowering depends on the solidification of the wood; hence the roof system of training results in the greatest floriferousness. *Allamandas*, however, are required to be portable, so that when in their prime they can be transported to hall, corridor, or staircase, and on occasion exhibited. For these purposes the plants are grown in pots, and the shoots trained to formal trellises of various shapes. Here, again, light proves the chief factor in securing a floriferous habit, the growths being allowed to spread out to the sun till the flower buds appear, and then the tying-in has to be done. *A. Chelsoni* marks its bateness of the process by snapping, *A. Hendersoni* not being much less resentful of tying-in; also, *A. Schottii* lets it be known that careful diversion from a natural course is imperative. Still, excellent specimens are grown on formal trellises, *A. grandiflora* being one of the most accommodating, and in well-grown examples very beautiful. *A. nerifolia* naturally forms a bush. It is about the only species that admits of spray cutting; hence this practice gives the plant a continuous blooming habit, for, given plenty of light, it thus pushes flowering growths successively, and, though not equal to the others in size and beauty of flower, deserves a place in the stove for that purpose. It is also hardier than the other species, consequently bears conservatory and other decorative use with little, if any, impairment. Indeed, it succeeds in a lower temperature, a point of some importance in small establishments.

PROPAGATION.

Allamandas are easily propagated by cuttings almost at any time of year, but the spring or early summer, when the old plants are pruned or the growths become rather firm, is the usual time. The top of the shoots comprise the parts selected, each cutting having two or three joints, removing the leaves from the lower one or two. Place each singly in a small pot, using a compost of sandy peat and sand in equal proportions, press the soil firmly around each cutting, and water moderately, the soil being fairly moist to begin with. Plunge the pots in a propagating bed having a bottom heat of 75° to 80°, attend to shading and watering, and in three or four weeks they will have emitted roots, and have made some growth. Then raise the pots out of the plunging material, and if in a propagating frame gradually inure to the air of the house, standing the pots on the surface of the bottom heat bed.

In a fortnight or three weeks' time the plants will have filled the small pots with roots, and must be transferred to 5-inch pots, and again stood on the propagating bed. The moisture constantly arising from the bed along with the gentle warmth facilitates growth. When the roots have got hold of the fresh soil, as indicated by the starting into vigorous growth, pinch the point of each plant intended to be grown on a trellis. This will result in the buds left, or some of them, starting, and when the new shoots have made two joints take out their points. When the pots become filled with roots the plants should be shifted into others 2 inches larger in diameter, and this may be again followed up as fast as the plants fill the pots with roots. Likewise the stopping of the shoots may be followed up two or three times in the

course of the summer, early spring propagation being practised, thus forming a good foundation for the future trellis-trained plant.

In the case of plants intended for training up rafters or over roof trellises do not pinch the leader, and if this divides select the best shoot, cutting the other away; also pinch side growths at the first joint, or rub them off whilst quite young. This will throw the vigour into the one shoot, and the leaves being retained it will become stout and pushed forward. Provide a stake if necessary for support. Shift into larger pots as the roots fill the respective ones, and when the plant has the stem required pinch out the point of the shoot. This will give the foundation growths for covering the trellis, these being from time to time stopped to secure an even basal formation. Grafting is done in the spring, using ripened wood as scions, operating by whip grafting, and covering the wounds with grafting wax. The stock may be any free-growing variety easily raised from cuttings.

COMPOST.

The plants succeed well after first being well rooted in a mixture of three parts good fibrous loam, and a part each of "nuts" charcoal, coarse river sand, and decayed cow manure or leaf mould. Such, thoroughly incorporated, answers either for borders (which need not be more than 3 feet wide and 18 inches deep over a foot of drainage) or for pots. When forming the border make the compost firm, and in potting the plants make the fresh soil firm round the old ball, loosening the sides of this and removing some of the old soil. Always leave room in potting for plenty of water, as the plants, when in active growth, require a liberal supply, alternating once or twice a week with good liquid manure. After the first year the plants require but one potting each season, which should be done soon after the buds have started to grow afresh in the early spring. When the plants are in as large pots as can be given, the ball should be reduced about one-third all round, and at the bottom, so as to allow of fresh compost under (with perfect drainage) and around the part retained, this not being deferred beyond the starting of the buds, and not much in advance of it. Plants in borders simply require some of the old soil removed, and fresh supplied in its place each year.—G. ABBEY.

(To be concluded.)

BLACKS IN POTATOES, AND "BLUES" IN THE RAISERS.

BOATRACE time has come and gone, but a bad attack of blues surely remains. In reading the communication by "Experimentalist" on page 276, I thought of the unhappy raisers who there fall under the lash, and sympathised with them in their trouble. The writer of this weird production wanders over the Potato fields of the past half century, smiting around him lustily, but when his performance is over I am irresistibly reminded of the terrific onset of Raphael Aben-Ezra, who, led on by Synesius, fell on the foe with fury, but after belabouring half a dozen or so without causing them the slightest inconvenience, found himself at length with his head beneath his feet on the field of battle.

One of the first things that must strike the discriminating reader is that the writer of the article on "blacks" is a master in the art of providing the "open door." He begins by telling us that he has been familiar with the trouble for over fifty years, and ends by tacking it on to muriate of potash. (How much of this ingredient was used in 1844, by the way?) But between the year named and 1898 he has likewise kept a watchful eye on larvæ, scorpion flies, and other suspicious characters, so that if an unwary critic challenges him on the manure question, the "Experimentalist" can fall with righteous indignation on the mysterious but offending "fly," and straightway run it in.

Now, while your correspondent is deciding the knotty point as to whether the black trouble has arisen from a "stab" or an "eye gone blind," other people, who are interested in the larger question of the production of heavy crops of well-flavoured Potatoes, will be asking themselves (1) Whether there is real ground for the attack made on modern sorts? and (2) What substantial basis has been advanced for condemning acid fertilisers wholesale.

I will deal first of all with No. 1. I did not happen to be born in 1844, but I do happen to know the three varieties which the writer singles out for special mention. What form of Ashleaf, I should like to ask, has higher qualities than Webber's White Beauty? The Old Ashleaf is its equal in flavour, but does not yield more than half the crop. Coming to Lapstone, what chance would that always weak and long since worn-out sort have with Duke of York if both were tried together at the present time? Lapstone was a popular Potato twenty-five years ago, and if it is not a popular Potato to-day it is because we have better—i.e., more suitable varieties. Duke of York is as fine in flavour as Lapstone was, as early, a heavier cropper, and of better constitution.

Coming to the York Regent, I unhesitatingly say that, good

as it was at its best, we have in Windsor Castle a variety not one whit inferior in quality, and in every way more reliable. Taking general merit into account in the case of a late Potato, I should like to ask, what old sort approaches Up-to-Date? It is the modern Potato *par excellence*, having a tough hardy constitution, respectable flavour, and magnificent cropping and disease-resisting powers. Let "Experimentalist" experiment a little more, and before he jumps at the conclusion that Lapstone and York Regent have never been equaled, try the quartette I have named—grand Potatoes every one.

Your correspondent raises the familiar bogey of injurious acidity in connection with muriate of potash. He also attributes the "blacks" to it. To be sure it slips out that the villainous "blacks" were there just the same when the muriate was not used; but what of that? When you want to establish a case you need not worry about such trifles as consistency and recognition of plain facts. It is easier to get on without them. It chanced, however, that I have been experimenting with Potato manures rather freely during the last few years, and, will you believe it? a muriate manure is the very best I have found. Let me just give the result of one careful trial, as typical of the general results.

The comparison was between (1) a dressing of good farmyard manure at the rate of four loads per 20 rods (one-eighth acre).

(2) The same with a mixture (B) of 3 lbs. superphosphate, 1½ muriate of potash, 1½ nitrate of soda, and 1 steamed boncflour per square rod.

(3) The same (farmyard manure) with a mixture (C) of 3½ lbs. superphosphate, 2 kainit. and 1½ sulphate of ammonia per square rod.

Not I alone, but everyone who saw the plot, was struck with the great superiority of No. 2. The ground was one of a large number of allotments in a field, and it was significant and instructive to hear allottees, who scorned the very word artificial, begging to know where "that there B stuff could be got."

It seems to me that "Experimentalist," as Mr. Thomson said of me a short time back, confounds things that differ. His advice to drain hollows is right enough, especially if an outlet can be found for the water. I quite agree with him, also, as to the time in certain cases. But, then, the advice on these scores is equally applicable whether natural or artificial manures are used. Damp, water-logged land will give bad Potatoes just as abundantly when stable manure is used as when artificials are employed. It is not the latter which do the mischief, but the unsatisfactory mechanical condition of the soil. Nothing can balance the latter evil. It must be remedied first of all, as experience has taught me full well.

Having got the soil in a sweet and friable state, let the Potato grower try the following briefly sketched plan:—Item 1, work under his top spit a moderate dressing (25 to 30 loads per acre) of good manure; item 2, apply 7 lbs. per rod of the B (soon to be re-christened the Pea!) mixture, preferably all except the nitrate in January, the latter at the first earthing; item 3, use seed not less than 2 and not more than 3 ounces in weight; item 4, include in the list of sorts Webber's Beauty, Duke of York, Windsor Castle, and Up-to-Date; item 5, avoid overcrowding, especially with the last-named; item 6, send the result to the Journal.—W. PEA.

GREEN VEGETABLES.

THE present time is that which is best suited to the sowing of most kinds of seeds of the Brassica family, and an open situation will produce the best plants. There is no comparison between plants thus raised and those sown near high walls and hedges, and all drawn in one direction by the shade and solar influences. Thick sowing is one of the greatest evils, and must be guarded against most carefully at all times. Such choice varieties as Magnum Bonum, First Crop, and Autumn Mammoth Cauliflowers give the best results when sown in pans at whatever date, afterwards being pricked out on beds prepared by treading on a hard surface about 4 inches of well decayed manure, and placing on this sufficient soil in which to prick out the plants some 4 inches apart. When planting time arrives they are each cut out in a square piece with a sharp knife and suffer no check, therefore good heads are sure to follow in rich soil if water is given to the plants until they become established.

Of Broccoli, that indispensable and popular variety, Veitch's Self-protecting, is well worthy of the best culture, and in a winter and autumn like what we have lately come through, with Superb Early White and Snow's Improved Winter White there has been no lack of good Broccoli. Model, Leamington, Knight's Protecting, and Late Queen are all desirable varieties for later supplies. Improved White Sprouting or Purple Sprouting are also serviceable where large quantities are called for, and one of these should be included in all collections. Of Kales, Curled Scotch, of which A1 is a fine strain, Asparagus, Cottager's, and others are best sown from the middle to the end of April. Rosette Colewort, Tom Thumb Savoy, and Miniature Marrow Cabbage should be sown towards the end of May, also early in June, and these small yet excellent varieties are of the greatest use where every foot of land is required to keep up a supply of good vegetables.—C. F.



PHALÆNOPSIS JOHN SEDEN.

THOUGH this hybrid is by no means new, having received a first-class certificate from the Royal Horticultural Society in 1888, it attracted much attention when it was staged at the Drill Hall by Messrs. J. Veitch & Sons some weeks ago. It was raised from a cross between *P. amabilis* and *P. Luddemanniana*, and is certainly one of the handsomest of the hybrid *Phalænopses*. Referring to *P. John Seden* (fig. 63), Williams' "Orchid Growers' Manual" says, "Of all the hybrid *Phalænopses* raised by Mr. Seden this is undoubtedly one of the finest, and has deservedly been dedicated to its raiser. The flowers measure 3 inches across, sepals, petals, and lip ivory white, covered over the whole of the surface with minute dots of purple." It is a chastely beautiful flower, that is certain to receive the praises of everyone who sees it.

NOTES ON PHALÆNOPSIS.

THE present is a good time for a thorough overhauling, cleaning, top-dressing, repotting or basketing wherever necessary of these beautiful Orchids. Considerably more care is necessary with these than with the ordinary distichous-leaved kinds, not only on account of the roots being easily injured, but also because these plants are very easily incommoded by disturbance of any kind. A sudden drop in the temperature is injurious, and for this reason it is not wise to take the plants to the potting shed unless this structure is properly heated, and care is taken in the transit of the plants to and fro. Usually a temporary bench may be rigged up in the house, or a portion of the stage can be cleared, and this prevents the possibility of a check.

Many of the plants will, of course, be in flower in a large collection, and these will not be pulled about until after the blossoms are past; but all others that require attention may be seen to. Where the baskets or pots, cylinders, or what not are sound and large enough for the plants, these will not, of course, be taken out of them; but all the sour, decayed, or unsuitable portions of the compost will be picked out or driven out by a forcible jet of water from the syringe. Most of the roots will be bared in the process, and all that are dead will be cut clean out, carefully avoiding at the same time any injury to the sound ones.

The hard material used may also have become somewhat heavily charged with moisture, if not actually sour, and any pieces not having roots attached may be removed, and new clean pieces substituted. Beyond these nothing but a little sphagnum moss is necessary as compost, and this will be used in a greater or less quantity according to the habit of the species and the size of the individual plant. In every case it is better rather under than over done, as the moss naturally keeps alive in the moist heat of a tropical Orchid house, and would soon become too thick.

The cushion of green moss is indeed a great help to the cultivator, for it acts as a moisture conductor to the roots, and is the best index to the state of the compost. In replacing the material carefully avoid leaving it in such a way that the moss and crocks shift about, as when the plants are taken down for examination or dipping, the roots may be just taking hold of a loose piece, and are snapped off short to the detriment of the plant. Bring the surface of the moss up in a neat cone-shaped mound, the top of this coming just under the base of the plant, and trim off all ragged ends, these if left making it difficult to determine the true state of the compost as regards moisture.

While the plants are in hand they may be thoroughly cleaned if any suspicion of insects are present, for it must be kept in mind that these lovely Moth Orchids are very sensitive and easily injured thereby; and, moreover, their dislike for sprinklings renders them peculiarly liable to insect attacks. The vaporising fumigators have done wonders towards making Orchid growing a success, for one always felt a disinclination to use tobacco smoke for these plants whenever the other method is as safe and harmless in its action as it is effectual in killing the insects. The only care necessary is to take out of the house any plants in bloom, for the texture of all Orchid flowers is very susceptible to injury, as witness the havoc wrought by fog in and near the metropolis.

The atmosphere of the house after the plants have been put to rights at the root should be kept very moist, and it is a good time to slightly

increase the temperature, for no matter how carefully these necessary cultural operations are gone about, there always is, and always must be, a slight check consequent upon them. The slight rise, too, at this time of year is quite necessary in the ordinary course of events, for it will be noticed that both roots and top growth are on the move and the season of activity has commenced.

In everything connected with their culture, gradually altered conditions are more conducive to success than sudden changes, and a rise of a few degrees in the course of a week or ten days is better than pushing it up all at once. Watering at the root deserves a passing notice. When much disturbance has taken place, the root will have lost the power of gathering moisture to a certain extent, and a limited supply will be necessary. Thus the necessity for a moist atmosphere will be apparent, for whether or not there is absorption through the foliage, it—the abundant moisture—will certainly check too rapid evaporation.

Wherever it has not been done, the shadings must be put in order, and for *Phalænopsis* there is nothing to beat the lath blinds that are advancing in favour with orchidists. The chink of light between the laths allows the quickening efforts of the sun to be felt by

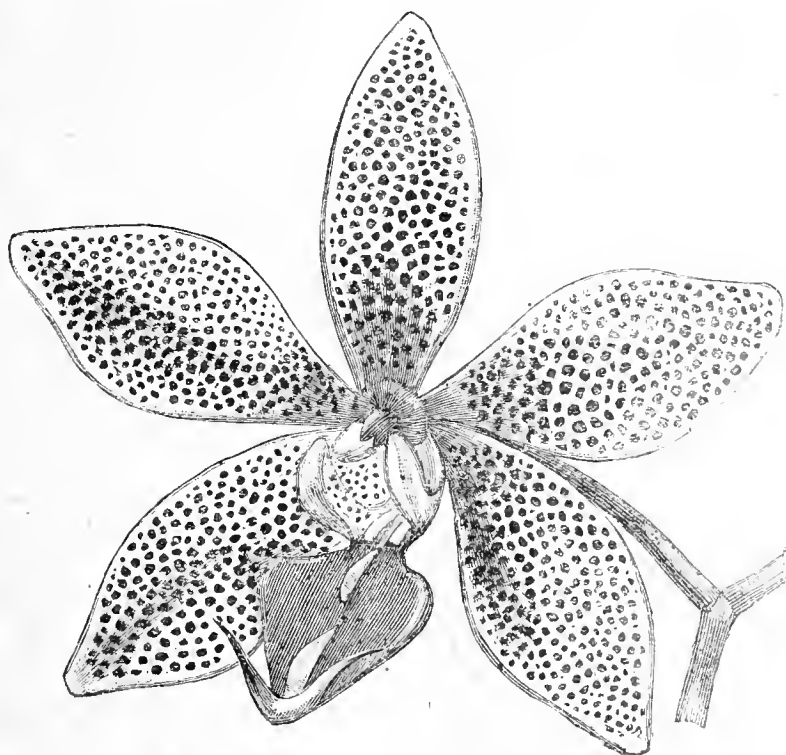


FIG. 63.—PHALÆNOPSIS JOHN SEDEN.

the plants; but the rays do not stay long enough in one particular position to do any harm by burning or scorching, as it is termed. Though for *Odontoglossum*, and some others of the very coolest section, these blinds may admit rather too much sun to allow of the temperature being kept down to its proper limit, for all heat and light-loving tropical kinds they are a capital invention.—H. R. R.

BEET.

BEET is indispensable in all well managed establishments, being in request at almost all seasons of the year; for salads, garnishing, and general use, it is the most valuable of any of the tap-rooted salad vegetables. Where large quantities are called for, and that to extend over the greater part of the year, several sowings are necessary to have roots that are tender and of the desired colour. The Turnip rooted variety is the one that arrives at maturity in the shortest time, and an early supply may be had by sowing in a warm position early in April on a rich mellow soil, while for succession one or more long varieties may be sown, as these are usually more popular than the Turnip rooted. One of the best varieties for this sowing or for later use is Cheltenham Green Top, while those who prefer roots of a darker hue would do well to select Sutton's Dark Blood Red and Middleton Park Favourite. A late sowing should be made the last week in May, and in some seasons this may turn out the best crop of the whole of the sowings, producing moderate sized, well shaped roots.

The ground must be well worked, and if possible a good dressing of wood ashes mixed into the soil when digging, taking care to incorporate these well up with the soil, and by taking small spits this is easily done. For exhibition, Pragnell's is one of the handsomest and brightest, and should be grown on soil heavily manured the previous year. Beet follows well after Peas, Celery, or any of the Brassica family. On light and sandy soils the crop will be much benefited by a light sprinkling of salt, taking care, however, that it does not come directly in contact with the growing plant.—C. FOSTER, *Doddington*.

IDEAS FOR BEDDING.

It may appear premature to write about bedding, but the air of activity in the potting shed and propagating houses gives evidence that for some time past it has been thought about. The bright days of the early spring find gardeners more than usually busy, as there seems so much that requires attention at the same time. Bedding is certainly not the business it used to be, as the methods have changed, and fashion now demands something more varied and elegant than the straight lines and acute angles of the old school. This change has, on the whole, proved beneficial to gardeners, as it has done away with a portion of the nursing that took up so much valuable time and space. There is much about the old style yet that we cannot well dispense with, and when judiciously blended with what we may call the new, the best effects are obtained. Advocates for any one particular system are apt to let their enthusiasm run away with them, and frequently do we see instances of this.

These notes are suggested by two engravings of the same garden—one ancient, and the other modern—and both taken from the same point. The first, depicted in the days before photography became a fine art, shows the old style. Flower beds and ribbon borders are the principal features, and in the faintness of the picture can be discerned the boldest of the outlines of numerous carpet beds. Easy graceful curves are conspicuously absent, and straight parallel lines abundant. There is a clear-cut, made-to-order sort of look about everything which is carried from the groundwork of the flower beds to the surrounding Yews. Statuary is dotted about, and in the stiffness of the scene there appears no suggestion of ease and restfulness such as is usually associated with a garden.

The second picture clearly shows the changes brought about by modern ideas, though here and there may be seen the relics of the old intermingled with the new. Half the flower beds are gone, and broad expanses of turf are noticed in their places. Stately trees stand boldly conspicuous that are hardly noticeable in the first picture. Not, indeed, because they are not there, but owing to the multiplicity of surrounding objects they are almost lost in insignificance. There is just a trace left of the old fantastic shape of the Yews, but soon it will be gone. In the place of the geometrical designs in the flower beds, there is just enough pattern to make it discernible, and the rest is an undulating outline of surface. Some of the walks, too, have been altered, and gentle sweeps are shown in the place of right angles. Along one terrace, where figured a long rectangular bed by no means in keeping, are a series of round beds dotted in the turf, every other one having in its centre a bushy specimen of variegated Maple which—though the camera refuses to depict its colour—forms a bright relief to the dark green of the surrounding foliage.

In spite of the changes in forms of bedding there are several features discernible in both engravings, and one of them seems well in character both with the old and new. I refer to the pyramid "Geraniums," a method of cultivation by no means common in gardens, as in few establishments, except the one under notice, have I seen it adopted. It appears to be one of the old customs, that has to some extent lost itself in modern changes. The first requirement in forming pyramids is tall plants, and in most gardens there are "leggy" Pelargoniums that might well be utilised for the purpose. Small round beds running parallel to walks are good situations for pyramids, and they may also be placed at intervals down long borders, and thereby break the flatness that often prevails.

Suppose we have such a bed to furnish. A stout stake is first placed in the centre, and others that will bend are deposited in circular fashion within 6 or 8 inches from the outer edge of the bed, and about a foot apart. These are then compressed and securely fastened at the top to the centre stake. The framework is now laid, and the Pelargoniums are planted at intervals round, and the stems distributed evenly, and fastened to the stakes. In a few weeks the stakes will be entirely hidden by foliage, and the pyramid, furnished from base to apex with bright showy flowers, will continue to be attractive till later in the autumn. The taller plants should be placed in position first to cover the apex of the pyramid, the shorter ones being suitable for filling the base. A row of blue Lobelia or other dwarf flowering plant round the whole will add to the effect. In the autumn the plants may be lifted, potted, and stood along the back wall of a cool vinery or Peach house, where they can remain until again wanted for planting. So tenacious of life are Pelargoniums that they may be used for many years for this purpose. The trouble in commencement is getting plants tall enough for the purpose, and therefore "leggy" greenhouse plants should be reserved, though in choosing varieties thought must be given to colour and habit. In regard to the latter, robust growing sorts that are apt to make large leaves and produce few flowers are not much good, and should be avoided.

There may be those who are on the look-out for fresh departures in the forthcoming season, where the introduction of pyramid "Geraniums" might supply the want. They have been features in

some gardens beside the one referred to for many years, therefore there is nothing new about them. There are many things connected with gardening that are old, yet known to the comparatively few, and a great deal that bears the name of being original is but the digging-up of the dry bones of some good gardener's work, and infusing them with fresh life.—G. H. H.

PROFITABLE FRUIT GROWING.

It is not without some misgivings that I commence the task of lecturing upon this subject. Were it the profitable cultivation of one particular kind of fruit I should have felt more at ease, but profitable fruit growing is a subject as wide as it is important—a subject which has been studied by the greatest intellects of our times, and recommended as the sure panacea for the depression which has, and still affects the agricultural interests of this country. While others again, after giving the subject their consideration, and in some cases carrying out experiments, have come to the conclusion that it will not pay, I may as well here, and at once, give you my own opinion on the subject, after being connected with fruit growing one way and another for over twenty years, and it is that fruit growing in this country, either out of doors or under glass, or a combination of both, which is perhaps the best method, can be made a profitable industry. I do not say that at the present time, unless under exceptional circumstances, and exceptional ability is displayed, you will make a fortune, but I say that a good and comfortable living can be got, and the measure of success will be according to the measure of ability put into the business.

While saying this, I am well aware of the many disadvantages the fruit grower of the present day has to contend with, and which were unknown to our predecessors twenty years ago. Foreign competition, and over-production in some things at home, have brought prices down of late nearly 50 per cent. Four or five years ago, Grapes for instance, would, during December and January, bring 3s. per lb. Now the samples must be exceptionally fine to bring more than 1s. 6d. Foreign competition is getting keener every year. New and improved methods of storage are being employed, that now, such perishable fruit as the Peach, which we thought beyond the power of a distant grower to put upon our markets, are seen in midwinter retailing in our shops at 8d. each, and hailing from South Africa. Some of the finest of what we call hardy fruit are brought a distance of 4000 miles. We have to face competition from every quarter of the globe. Each year we hear of new lands in many distant parts being brought under fruit cultivation, principally for the British markets, and each year we see improvements in storage and fast transportation. The fruit grower of to-day and those who may think of starting this industry may make up their minds to face in the near future even lower prices for many things than what is the standard now. Still, with all this, I hold that British grown fruit can hold its own, and when properly gone about can be made to pay.

The best of our home produce still tops the market by a long way. No foreigner has yet been able to approach our home Grapes. What tasteless, insipid things foreign Tomatoes are compared to our own. I may here say that not only do Scotch Tomatoes command the highest price, but some that are grown in Ayrshire have maintained a record price during the last few years. I have seen these Tomatoes fetch 9d. per lb. when Covent Garden quotations were 5d. I have seen also at the same time, and in the same saleroom, hothouse Grapes sold by the cwt. at 5d. per lb., 4d. less than the Tomatoes. Strawberries cannot be brought long distances and maintain the rich flavour of fresh gathered fruit. The same could be said of many other things; even the splendid Apples which come to us in ever increasing quantities from across the Atlantic have not the rich flavour of our home fruit, and if we are here beaten by the States and Canada, as we undoubtedly are, it is because they are put upon the market in quantity of uniform quality and attractive appearance. Not that the fruit is itself superior in any way to the best that can be grown in this country.

I think the growth of the enormous trade in American Apples is very much the same as that of the Danish butter. We can say of Danish butter that it is good, very good, but it has not the real butter flavour the best home produce has, which still commands the top market price, but this best can scarcely be had. It has not been produced in sufficient quantity to supply the demand, hence the foreign has stepped in with a good all-round article, which has had no difficulty in displacing the inferior butter, which is still too common. It has been the same with the Apple trade. I will not say that in Scotland we will ever be able to compete with the Americans, but I cannot see why in many parts of England, if properly gone about—growing only the best sorts, and bestowing the same taste and care in gathering, grading, and packing as the Americans do—home growers should not be able to hold their own,

at least they might take a much larger share than they now do of supplying the people with this wholesome fruit.

I have said that fruit growing in this country can be made to pay. I have tried to show you what I daresay most of you already know, that many fruits can be grown in this country superior to and commanding a higher price than those of the foreign producer. Then why, you may ask, is there such diversity of opinion as to whether fruit growing is profitable or not? And why do we hear of so many failures? I suppose the answer would be, they failed for lack of knowledge, and to a certain extent this would be correct. Technical education, or rather the want of it, has been the favourite cry of late as the cause of our decline in other branches of industry besides fruit growing. Well, if technical education means the thorough mastery of all details bearing on a particular trade, I say it is a good thing. In fruit growing no great success will ever be attained without it; but in my opinion the things most wanted are a little more brains, a little more enthusiasm, more energy, foresight, and business aptitude, and above all a capacity for taking full advantage and acting upon the knowledge we already have by reading, observation, and practice.

It is not the knowing, but the doing that will ever achieve anything. For instance, what gardener but has known from the earliest years in his profession that if a fruit-bearing tree is healthy looking, but not fruitful, that in lifting or cutting its roots will in nine cases out of ten bring it into a bearing state? Yet we find thousands and thousands of trees all over the country in a fruitless condition, and allowed to go on from year to year. In how many private gardens do we find that if the produce of the trees covering, or rather about half covering, the walls were sold it would bring more than would pay for time and material to tie and prune them. It is sad to see such grand positions so unprofitable; but how can it be otherwise when we find borders in many cases composed of soil that has been there for perhaps a hundred years, and which are annually dug and sometimes trenched to within 2 feet of the wall. What can such trees do but send down strong wood roots to make strong unfruitful growth? Does every gardener not know that the more abundant the small fibrous roots of a fruit tree are the more abundant will the crop be if well fed? Yet how few act upon this knowledge in an intelligent way. No; it is not so much knowledge we need as a something to spur us up to do what we know should be done; something to give us more dash and go-ahead, more rooting out, pulling down and building up, more independent thought and backbone, a greater love for work—hard, intelligent, persevering work—putting as it were our best foot foremost, and depending on the strength of our right arm. This is what is needed. I have never yet heard of a case where a man possessed of these qualities was known to fail. These were the qualities of the men who founded some of the largest market establishments around London and the south, and who, mind you, had not the advantage of a gardener's training, but were brought up to and made their living at other trades and professions.

About the best and heaviest crops of market Grapes I have yet seen were grown in the north of England by a man who up to middle life had been a wheelwright. By far the largest and most flourishing market establishment in Scotland was started about ten years ago by a young man from a city office. Now he has nearly 10 acres covered with glass, grows annually close on 100 tons of Tomatoes, 60,000 pots of Chrysanthemums, and hundreds of thousands of other things. These men were enthusiasts, loved their work, and gave it their whole-hearted attention; and though they had everything to learn as they went along, and many failures and obstacles to surmount, by persevering hard work they were successful, as all who follow their footsteps will be.

(To be continued.)

CANKER AND PRUNING.

I HAVE been reading your remarks to a correspondent on canker in fruit trees, on page 314. From what I observed on the 6th inst., I feel inclined to ask if rough pruning is not one of the causes of canker? Standard Apple trees, about twelve years old, were being thinned out with a saw, and the jagged saw-cut left unsmoothed with a knife. In places the saw had gone nearly through the branch, which had then been either pushed off, or the branch was twisted, so that the bark was peeled off from 1 to 4 inches in length. The whole of these branches could easily have been removed with a sharp knife, which would have left the cuts clean, and the whole process workmanlike. The only use the knife had been put to was pushing its point into the stem just below the head of tree, and drawing it steadily down. Is not this a case of inviting canker?—R. C.

[Such rough mutilation, mis-called pruning, as that described, is pitiable, and affords direct means of access to the spores of the canker fungus (*Nectria ditissima*) to take possession of the trees. The spores, however, do not abound equally everywhere, and, moreover, we entertain a strong belief that all Apple trees are not in the same degree liable to invasion by the enemy. Sound cultural methods, intelligently carried out, are of the first importance in fortifying trees and plants against their attacking foes.]



WEATHER IN LONDON.—The Easter holidays may be said to have been passed in fine weather, notwithstanding the fact that we had some heavy showers, with a little thunder, on Saturday. Good Friday was a glorious day, the sun shining from an almost cloudless sky. There was a slight breeze that made the day very pleasant. On Easter Sunday there were one or two slight showers, but Bank Holiday was a beautiful day, being bright and warm until the evening, when it commenced to rain between seven and eight o'clock. On Tuesday it was cold in the morning but became warmer later. There was a high wind all day. On Wednesday it was genial and summer-like.

— **WEATHER IN THE NORTH.**—On the morning of the 5th inst. 7° of frost were registered, but there has been none since. The week was throughout one of April weather. Westerly winds have prevailed, showers have fallen every day, and the temperature has generally been high for the season. Vegetation has made a rapid advance, hedges and trees are tinged with green, and there is ample promise of fruit blossom. —B. D., *S. Perthshire*.

— **SOWING VEGETABLE MARROWS.**—I find the middle of April a suitable time for sowing the seeds, employing 3-inch pots. Place one crock at the bottom of each pot, over that a layer of fibry turf. Fill up with a rich compost of loam, leaf soil, and decayed manure. Make a hole in the centre with the finger, dropping in one seed, cover it, and make level. Use the compost moist. Stand the pots together in a warm house or vinery, shading with paper. A few light syringings with tepid water will probably suffice until germination ensues, when a position close to the glass must be afforded, and shortly afterwards a similar position in a cold frame.—E.

— **PROFITABLE FRUIT GROWING.**—This subject seems to be of perennial interest to all who are engaged in horticultural matters, and papers are frequently being read in different parts of the country at gardeners' meetings. Of the more recent ones that have been brought to our notice was that of Mr. Duncan Buchanan, Forth Vineyard, Kippen, which was read before the members of the Ayrshire Gardeners' Mutual Improvement Association on March 31st and April 1st, 1898. The essayist dealt with the subject in a practical, comprehensive, and exhaustive manner, and many valuable points were given that ought to be generally adopted. The *Ayr Observer* gives the text of the paper, which we are confident many readers would be glad to read, and we therefore reprint it in an abridged form, commencing on page 322 of this issue. The continuation will appear in an early issue.

— **WOLVERHAMPTON HORTICULTURAL CLUB.**—At a recent monthly meeting of above Club Mr. J. Martin of Messrs. Sutton and Sons gave an instructive lecture on the Gloxinia. In the course of his remarks Mr. Martin stated that the Gloxinia was introduced into this country in 1739, but not generally grown until about twenty years ago. The normal varieties and the fertilisation and selection which has given us the flower in its present improved form were described, and lengthy details were given as to treatment, both as regards the culture for decoration and for exhibition from the time of sowing the seed until the blooming, which he said can be easily done in six months. As to varieties, the lecturer recommended Her Majesty, Reading Scarlet, Azure Blue, and others. A good discussion followed, and questions were asked by members, to which Mr. Martin replied.

— **LONDONERS ON BANK HOLIDAY.**—There can be no doubt that Londoners as a class have a lively sense of the importance of enjoying their Bank Holiday, and the number of travellers by every available means of locomotion on those days is astounding. As a nation we are said to take our pleasures sadly, but the inventor of that thought would alter his opinion if he went to Hampstead Heath on either of the three summer Bank Holidays. Of holiday-makers 'Appy' Ampstead claimed, it is estimated, on Easter Monday upwards of 100,000. Other popular resorts are Kew Gardens, the Zoological Gardens, the Crystal Palace, Epping Forest, each of which was very largely patronised, while the day being so fine and genial, the seaside secured a heavy contingent. All the parks and commons were enjoyed by thousands of juveniles, and with neither these nor their elders can it be said that they were "taking their pleasures sadly."—SOUTH LONDONER.

— **PROPAGATING BLUE AND WHITE LOBELIAS.**—The old plants of Lobelias divided a few weeks since, and the divisions placed in boxes and pans, have grown so freely in the warm moist atmosphere of a vinery that stout cuttings are obtainable. These are most useful for increasing stock, as they root quickly in sandy soil under warm, moist conditions, forming nice plants by bedding out time.—E. S.

— **OUTDOOR SPRING FLOWERS.**—The present seasonable weather is suiting the Hyacinths in beds and borders, and they are making attractive displays in public parks and private gardens. Primroses and Polyanthus have advanced into flower rapidly since the month came in. The main display of Wallflowers will shortly be in full beauty. Double Daffodils brighten beds and borders, and the earliest Tulips are showing colour.—E. D. S., *Gravesend*.

— **ROYAL METEOROLOGICAL SOCIETY.**—At the ordinary meeting of the Society, to be held at the Institution of Civil Engineers, Great George Street, Westminster, on Wednesday, the 20th inst., at 7.30 P.M., the following papers will be read:—“Anticyclonic Systems and Their Movements,” by Major H. E. Rawson, R.E., F.R.Met.Soc.; “Results of Observations on Haze and Transparency in 1897,” by the Hon. F. A. Rollo Russell, M.A., F.R.Met.Soc.

— **NOT A PARADISE FOR MARKET GARDENERS.**—Miss Sykes, in her travels through Persia with her brother, Captain Molesworth Sykes (Messrs. A. D. Innes & Co.), states that living in Kerman was by no means expensive, as meat and bread were under 1d. a pound, eggs ten a 1d., chickens 2d., a minute lamb 4½d., and all the ordinary articles of food in the same proportion. We paid 1d. daily for our vegetables to the old gardener, who rented the garden from our landlord, advancing to 2d. in the fruit season, when we consumed any number of Mulberries, Apricots, Peaches, Melons, Figs, and Grapes.

— **A REMARKABLE CASE OF CORRELATION.**—It has occurred to me that the following extract from “Nature,” March 31st, 1898, might interest especially some of the Pine Apple cultivator readers of the *Journal of Horticulture*. “A very interesting case of correlation is recorded in the Bulletin of the Botanical Department, Jamaica, for December, 1897. Particular attention has been paid lately to the selection of good Ripley Queen Pine Apples, and it is found that if there is a broad red stripe in the centre of the leaf, the fruit will turn out good; in other cases the fruit goes into holes at the bottom and is attacked by ants.

— **CHOU DE MILAN.**—On an allotment at Surbiton a week or two ago I saw a patch of this most useful hardy Kale, that I verily envied, it was so clean, green, and beautifully fresh, the spring sprouts, that form so delicious a product when well cooked, having pushed a few inches long. Striking was the contrast presented by the dark curled leafage of the tall and other Scotch Kales, so generally grown, for these were all more or less browned or burnt with fog, and were unfit for use; but, of course, the stem sprouts were yet unharmed. A more perfect piece of hardy Kale for the time of year I cannot hope to see, and I longed to be able to gather sprouts from it; yet in how few gardens relatively is Chou de Milan grown. Perhaps it wants a new name to make it eagerly sought after. One feature noticeable was that the soil had not been manured, but having been an old pasture with the turf removed, then dug, it had produced these capital plants. Do we really not often create fungoid diseases in Brassica by giving them too much manure?—A. D.

— **DOUBLE PRIMROSES.**—The double Primroses are deservedly favourites, and whenever seen usually attract much admiration. Those most frequently seen are the double white and the double lilac. These are both of vigorous growth, and in this respect compare favourably with some of the others. There are at least two forms of the white. There are also two or three yellows, one being deeper in colour, but less free in growth than the double sulphur. Purple, blush, and several other shades are now represented. The worst fault the double Primroses have in the garden is that they are so liable to be lost from drought or severe frost. They are hardy, but are often lifted partly out of the ground by frost, and if not attended to become lost. They suffer much in dry weather, and it is common enough after a dry season to see that some of the southern growers are unable to offer plants of some of the scarcer forms. They thrive splendidly during summer in a frame placed on a shady border, the glass being shaded with summer cloud or other material. The frame should not be close, and the plants ought to be watered regularly with a fine rose. This will keep down green fly, to which they are subject if grown in a confined atmosphere. Annual division and replanting are almost necessary for these Primroses when large plants are grown.—S. ARNOTT.

— **TOP-DRESSING MINT.**—May I recommend those who top-dress Mint to make a new bed every year in April from cuttings made from the tops inserted about 1 foot by 9 inches apart? When the time comes for boxing roots for forcing they will be delighted with the plants so treated. The above is the practice of most market growers, who, I find, can give us gardeners in private places many wrinkles.—JAS. HAMILTON *Burton-on-Trent*.

— **MARCH WEATHER AT DRIFFIELD.**—Mean temperature at 9 A.M. (corrected), 39.3°. Wet bulb, 37.49°. Mean maximum, 45.93°; mean minimum, 32.96°. Highest, 57.8° on the 18th; lowest, 26.0° on the 15th. Mean of maxima and minima, 39.45°. Mean radiation temperature on the grass, 29.27°; lowest, 21.5° on the 21st. Rainfall, 2.07 inches. Number of rainy days, eighteen; greatest amount on one day, 0.46 inch on the 26th.—W. E. LOVELL, *York Road, Driffeld*.

— **SUSSEX RAINFALL.**—The total rainfall at Stonehurst, Ardingley, for March was 1.29 inch, being 0.79 below the average. The heaviest fall was 0.38 inch on the 3rd. Rain or snow fell on eleven days. Total fall for the quarter 3.45 inches, which is 3.21 inches below the average. The maximum temperature was 53° on the 22nd, and the minimum 27° on the 13th and 25th. Mean maximum, 46.16°; mean minimum, 33.19°; mean temperature, 39.67°—1.19° below the average. The storm of the 25th and 26th was severely felt here, snow falling continuously both days, with strong N.E. wind. Maximum temperature, 35° and 36° respectively, falling to 27° on the former.—R. I.

— **MARCH WEATHER AT HODSOCK PRIORY.**—Mean temperature, 39.9°. Maximum in the screen, 61° on the 18th; minimum in the screen, 20.2° on the 7th. Minimum on the grass, 11.8° on the 7th. Frosts in the shade, seventeen; on the grass, twenty-four. Sunshine, seventy-nine hours, or 22 per cent. of the possible duration; twenty-seven hours below the average. Rainfall, 1.49 inch; below the average, 0.16. Rain fell on sixteen days. Maximum fall, 0.33 inch on the 26th. Rainfall since January 1st, 2.62 inches; 2.49 inches below the average. A rather cold month. White frosts at the commencement, and snow squalls near the end. Vegetation made little progress.—J. MALLENDER, *Workshop*.

— **ARREARS IN RAINFALL.**—Mr. T. P. Newman, Hazelhurst, Haslemere, directs attention, through the “Surrey Times,” to the serious outlook for the summer owing to the very little rainfall that we have had for months. The statistics which Mr. Newman quotes are significant. During the first three months of this year only 4.08 inches of rain were registered, as compared with 13.45 inches in the corresponding period of 1897. Moreover, the closing months of last year were almost equally dry. The seven months from September, 1897, to March, 1898, inclusive, produced 14.04 inches of rain against 34.68 inches in the same period of 1896-7. It is noteworthy that the winter of 1896-7 produced enough rain for a whole year, whereas this last winter has only produced about one-third of that quantity in the beautiful district of Surrey, where the amounts were carefully registered.

— **THE WEATHER LAST MONTH.**—March was much colder than January, and snow fell on several occasions, but melted as it came. The wind was in a westerly direction eighteen days. Total rainfall 1.46 inch, which fell on eighteen days, and is 0.10 inch below the average for the month. The greatest daily fall was 0.42 inch on the 26th. Barometer (corrected and reduced), highest reading 30.293 inches on the 10th at 9 P.M.; lowest, 29.426 inches on the 28th at 9 A.M. Thermometers: highest in the shade 61° on the 18th; lowest, 22° on the 10th; mean of daily maxima, 46.09°; mean of daily minima, 31.61°; mean temperature of the month, 38.85°; lowest on the grass, 16° on the 7th and 10th; highest in the sun, 118° on the 18th. Mean temperature of the earth 3 feet deep, 40.38°. Total sunshine, 107 hours 50 minutes. There were four sunless days.—W. H. DIVERS, *Belvoir, Grantham*.

— **WEATHER AT DOWLAIS.**—Observations here for the past month show a total rainfall (including snow), 1.69 inch. Snow alone, 0.62; which fell on six days. Rain and snow on three days. Rain alone on six days. Greatest rainfall, 0.28 on the 19th; greatest snowfall, 0.28 on the 6th. Mean maximum temperature, 47°; highest reading, 63° on the 21st. Mean minimum, 26.9°; lowest reading, 18° on the 6th. Below freezing point on twenty-seven nights. There were nine sunless days. The wind was in the N. and N.W. on fifteen days, and in the S.W. on nine days. A terrible gale was raging here from the 24th to the 27th inclusive, with blinding snowstorms on the 24th and 26th. On the 3rd we had a fair sample of weather, starting first thing with about three hours' sunshine; heavy clouds came up from the N.W., a very heavy hail storm, with a slight fall of snow, accompanied by thunder and lightning, and finishing with 9° of frost.—WM. MABBOTT.

— **BECKENHAM HORTICULTURAL SOCIETY.**—The members of the Beckenham Horticultural Society have during the last three weeks been enjoying a course of lectures on "Insects Injurious to Garden Crops," given by Mr. P. Hedworth Foulkes, B.Sc., Lecturer on Agricultural Entomology at the University Extension College, Reading. Mr. Foulkes treated upon the various forms of insect pests and their differing modes of attacking the plants, and the most approved methods both of prevention and cure. The lectures were rendered more interesting by the limelight pictures with which they were illustrated. At the last meeting an extraordinary cluster of fine Mushrooms was exhibited by Mr. Mark Webster, gardener to Mr. E. G. Preston of Kelsey Park.

— **RHODANTHES IN POTS.**—Rhodanthes are amongst the prettiest of everlasting flowers, and when grown in pots they make charming decorative plants. Seeds may be sown now in pans or boxes, and when the seedlings are large enough for removal they should be pricked off in 5-inch pots, placing about half a dozen in each. If grown close to the glass in a cool greenhouse they will be sturdy in habit, and when their graceful flowers open the plants are useful for conservatory and room decoration. If cut when ripened and hung up in bunches they will be suitable for decorative purposes in the winter, when flowers are scarce. The seeds of Rhodanthes are usually sold in varieties, the most useful being *R. maculata*, yellow and crimson; *R. alba*, white; and *R. Manglesi*, rose and yellow.—G.

— **PRESERVATION OF FARMYARD MANURE.**—The chemist to the Canadian Agricultural Department has recently completed an experiment in the preservation of farmyard manure which is of interest to farmers. A lot of manure, composed of equal quantities of horse and cow manure, was kept in a partially closed shed for a year. In the first instance it weighed 8000 lbs., and at the end of the year only 2659 lbs. The reduced bulk was much richer in the elements of fertility than the fresh manure, as it well might be, considering that there was a loss of two-thirds of the original bulk. But, although the percentages of nitrogen, phosphoric acid, and potash were greater in the rotten than in the fresh manure, the total quantities were much less. The 8000 lbs. of fresh manure contained 41.6 lbs. of nitrogen, 24.8 lbs. of phosphoric acid, and 60.8 lbs. of potash; whereas the 2659 lbs. of rotten manure a year later contained only 23.6 lbs. of nitrogen, 19.5 lbs. of phosphoric acid, and 39.8 lbs. of potash. The above figures give some idea of what happens when farmers keep manure in dunghills in the open for a long time, where naturally the loss is much more rapid.

— **DEEP SOIL IN GARDENING.**—A wise gardener, who was very successful with his gardens, occupied an acre of ground. But when conversing about his garden he used to inform questioners that he cultivated two acres. This was to his newer friends. But this he did to explain that, instead of digging up the ground some 5 or 6 inches deep, as most cultivators do, he stirred it up to a foot or more—having one of his acres beneath the other. This piece of wisdom is, however, not generally perceived. Double the crops can certainly be obtained from ground loosened in this manner. But this is not understood by the ordinary cultivator. Those who are engaged in the culture of Beet especially know that land is always doubled in value when sub-soiled—that is to say, when the under surface is deeply loosened. It is now well understood that a pulverised soil will hold air and moisture, so necessary to successful culture, to a much greater extent than earth that is packed solid, so that air and moisture cannot be retained. In the drier weather plants will not grow and flourish when under ordinary shallow culture. The plants struggle along and appear tired of life. So says "Meehan's Monthly," and it is quite true.

— **CLIVIAS AT CHELSEA.**—These stately plants, with their handsome strap-like leaves and imposing heads of orange-coloured flowers, are becoming more popular every year. This is as it should be, for they are undoubtedly valuable additions to any collection of plants, as they can be used for various purposes, and are not quick to resent a little neglectful treatment. For the conservatory during the spring they are extremely valuable, especially when the plants have grown to considerable size, while for suitable position indoors they are exceedingly useful. In either case the flowers last a very long time in good condition, and of course the deep green foliage is always ornamental. In one of the many houses flanking the long walk in the Royal Exotic Nursery, Messrs. J. Veitch & Sons have a representative collection of the best varieties, and they make a very handsome display. The plants are in the rudest health, and the immense heads of flowers rising from the deep green leaves are imposing and attractive. Visitors to see the *Amaryllis* should spare a few moments to walk through the *Clivia* house.—H.

— **WIND-FERTILISED FLOWERS.**—Wind-fertilised flowers, it may be noticed, always produce large quantities of pollen, as, for instance, the Hazel, the Willow, and nearly all Grasses.—E.

— **ANEMONE RANUNCULOIDES.**—Lovers of wild flowers have for several springs past been gladdened by the sight of a fair number of plants of the yellow Wood Anemone, *A. ranunculoides*, flourishing in the Embankment Gardens between Waterloo and Charing Cross bridges. They were growing around several of the flower beds, and had most likely been brought thither in the turf used for edging, though so attractive were they that one was tempted to imagine they had been put in purposely, and to thank the authorities for this embellishment to the garden.—("Times.")

— **PERILLA NANKINENSIS.**—Where coloured foliage is required for giving effect among bedding plants or forming contrasts, this half-hardy annual is very suitable for the purpose. *Perilla nankinensis* is very accommodating, and will thrive in almost any position. A rich soil is not desirable, as it is liable to grow very robust, and the purple colouring of the foliage is not nearly so deep. If mixed with flowering plants in beds or borders, and it grows too tall, the tops may be cut off to the level of the surrounding plants. Breaks will soon be made afresh, the colour of which will be very bright. Seeds should be sown in boxes or frame, and the seedlings pricked off in a nursery bed prior to the final transplanting.—H. H.

— **THE "CACTUS JOURNAL."**—We have received the first and second numbers of a new publication entitled "The Cactus Journal," and must congratulate the publishers on the excellent, general appearance, the type being clear and good and the illustrations admirably executed. We regret to observe, however, that the errors in spelling are very numerous, and it will be a matter for regret if the value of the journal should be marred by faulty editing. For example, there are at least half a score of errors in one column, mostly due to the use of capital letters where small ones are correct according to the best authorities. We wish the promoters every success, and hope there are sufficient Cacti growers to support a monthly sixpenny journal. The publisher is Mr. E. W. Allen, 4, Ave Maria Lane, Paternoster Row, London.

— **"THE USE OF THE HOE."**—All teachers of gardening, whether practical or theoretical, are agreed as to the flat hoe being one of the most useful implements in the garden. Stir the surface soil, is the advice frequently given, and it is too good to become hackneyed. Soon the various crops will be showing themselves in the garden, and spring and summer sunshine, following rain, will cake and harden the surface. This will crack, and the moisture that it is advisable to conserve will escape. To hoe ground, except weeds are growing, might strike a novice as being superfluous labour; but gardeners know better, and to assist the maturity of plants there is nothing better than frequently and thoroughly stirring the surface soil with the hoe. More particularly does this apply to stiff clayey soil, the surface of which bakes exceedingly during drought.—H.

— **PROPOSED PARK FOR LEE.**—The Parks and Open Spaces Committee of the London County Council at a recent meeting reported that they had had brought to their notice by a deputation of residents in the district of Lee an offer made by the Earl of Northbrook and Viscount Baring to present to the public, in commemoration of the Diamond Jubilee of her Majesty the Queen, a piece of land nearly 7 acres in extent in Bromley Road, Lee, for the purpose of a recreation ground. The only conditions attached to the gift were that the ground should be taken over by the Council and laid out and properly maintained by it as a recreation ground, and that the costs of Lord Northbrook's solicitor and surveyor should be borne by the Council. Building operations were going on in the district, and there was a Board School close by. In the circumstances they did not hesitate to suggest that the Council should undertake the charge of the land on behalf of the public. It was estimated that the value of the land to be presented to the Council was £4125, and that the solicitor's and surveyor's charges would therefore be about 40 guineas and 25 guineas respectively. There might, however, be some other slight expense, and they therefore asked for a vote of £100 in order to cover all possible outgoings. They estimated the cost of laying out the land, including fencing, seats, and watch box, at £1000, and the annual cost for maintenance at £200. They recommended "That the Council do approve the estimate submitted by the Finance Committee, and do agree to take charge of and maintain as a recreation ground the piece of land at Bromley Road, Lee, offered by Lord Northbrook and Lord Baring, and do undertake to pay the costs of Lord Northbrook's solicitor and surveyor in connection with the matter; that it be referred to the solicitor to take all steps necessary to complete the matter."



CHRYSANTHEMUM G. J. WARREN.

I NOTICE, on page 308, that some doubt has been expressed as to this variety proving satisfactory. Having seen reports on its first appearance in the *Journal of Horticulture* at the end of 1896, I ordered one plant, and have great pleasure in stating that it succeeded beyond my expectations, considering it was the first year of distribution. My plant produced three good flowers, which were exhibited in the famous Jubilee competition at Edinburgh, and one of them was fit to rank in any stand of Chrysanthemums that I have yet seen. Doubtless these flowers were seen at Edinburgh by many Chrysanthemum growers. I have every confidence in the variety, and am growing twelve plants for exhibition blooms this season, which is a large number considering the small amount of glass available here for Chrysanthemums, and there is only one other variety—Madame Carnot—which is similarly favoured by me. The colour of G. J. Warren is best described as canary yellow, and in habit of growth it is the exact counterpart of its parent. Both Mr. Warren, the raiser, and Mr. Wells, the distributor, are to be congratulated on this splendid acquisition which they have given us.—W. H. DIVERS, *Belvoir Castle Gardens, Grantham.*

THE "CARNOT" MYSTERY.

I QUITE agree with Mr. Haggart (page 285) that some elucidation of this subject is desirable in the interest of intending cultivators, and especially exhibitors of Chrysanthemums. I have never experienced the misfortune of disqualification, like Mr. Haggart, but have many times been compelled to write the distasteful word on the entry card, and often with regret, as I have much sympathy with young showmen who have been misled into a position of false security.

In the majority of instances the exhibitor has had to pay the penalty which he unfortunately incurred through following too closely the classification of certain varieties by Chrysanthemum vendors. Many times I have gleaned this as the cause when in conversation with the victimised exhibitor, who almost invariably remarks, "I thought this was quite right, Mr. So-and-so classes it as such and such." Very often I have replied, "What a pity you did not consult the N.C.S. catalogue, which is the generally acknowledged guide in cases of nomenclature. This is an authority, whereas Mr. So-and-so's catalogue is but the opinion of an individual." Too frequently, I am sorry to say, the reply comes, "Why, I did not know there was a N.C.S. catalogue!" The ignorance of the existence of such a guide has surprised me many times, especially knowing as I do that Chrysanthemum exhibitors as a rule read attentively. This is, however, somewhat of a digression, and I return to the "mystery."

It is an unfortunate circumstance when varieties which are identical, or as nearly so as possible, receive distinct names. For this there can only be one reason, which is all too obvious. Upon matters of nomenclature in Chrysanthemums I have fixed opinions, as several of my friends know, though some of my views may seem to them a little pedantic. In the long run I am convinced they will not be found so, but, on the contrary, point in a severely practical direction.

One of my contentions is that a new variety, be it a sport or otherwise, should retain the name with which it was originally invested, and any sport of a similar nature appearing subsequently in any other part of the country, or subsequently exhibited, should receive no other than the same original name. This would prevent confusion, wasteful expenditure, and disappointment. If this is not a practical view I should like to know what is. The sport from Prince Alfred, named Lord Wolseley, occurred in two distinct places the same year, but there was only one distinct variety, not two, and the only rightful name for both was that first given—Lord Wolseley.

In the question raised by Mr. Haggart, in my opinion a long stretch of imagination is required to distinguish the difference between G. J. Warren and Yellow Madame Carnot. Mr. Wells procured and exhibited G. J. Warren in 1896. To be accurate, it sported in the gardens at Balcombe Place, near Brighton, and received its name in compliment to the gardener there.

I have had ample opportunity of comparing G. J. Warren and its co-sport Mrs. W. Mease; having seen large and small blooms of both under various circumstances, I have no hesitation whatever in saying they are quite distinct. At the end of November last I had examples of both before me every day, for at least a fortnight, for the express purpose of notifying any change of colour, should there be any, while the blooms were passing through the various stages of development and decay. As is customary with all flowers, the colour in both faded somewhat, but it was proportionate.

G. J. Warren is yellow in colour. Many catalogues describe it as canary yellow. I am not sure this is the right description, as there are both pale and deep shades of colour in canaries. I am more inclined to say that the colour is yellow, inclining to golden yellow.

Mrs. W. Mease is a pale or soft shade of primrose. The bloom of this variety that secured for Mrs. Mease the premier distinction in the Japanese section at the N.C.S. November exhibition, was a distinctly typical one. Some of the best coloured blooms of G. J. Warren that

I have come across were staged at the Edinburgh Show last November. That they were thoroughly distinct from Mrs. Mease there cannot be one single doubt.

I fail to see any difference between G. J. Warren and Yellow Carnot.

This family, like many other types of Chrysanthemums, both Japanese and incurved, bids fair to become a large one. The latest addition to the "Carnot" group is a pink form, which I am hoping to test during the current season. If this addition to a deservedly popular family possesses, as I hear it does, all the charming characteristics of its parent, it will be a distinct gain to the Chrysanthemum world, as it is most difficult to conceive a more elegant type of a Japanese Chrysanthemum than the original Madame Carnot, sent out by that enterprising and successful raiser, Mons. Calvat.—EDWIN MOLYNEUX.

[Our experienced correspondent's views on nomenclature are indubitably sound. They are in accord with the recognised practice of botanists all over the world. The first name of a plant, unless it is proved to be scientifically wrong, has priority over all others. If this principle were formally ratified by the N.C.S., good service would be done to the great community of Chrysanthemum purchasers and exhibitors. At present the weight of evidence is decidedly in favour of the distinctness of G. J. Warren and Mrs. Mease, but not of the distinctness of G. J. Warren and Yellow Madame Carnot. It may be expected that the exact origin of the last named will be made clear by persons who are intimately acquainted with the facts of the case. Records of the origin of sports are always interesting, and may be important.]

TROPÆOLUM JARRATTI IN BASKETS.

AMONG exquisite plants which springtime brings to perfection in our cooler structures for floral display is this lovely little Tropæolum. It should be grown by every plant lover, and those who do not yet know it, although it is an old introduction, should inquire of their friends to be allowed to see its charms during the present month, when it is at its best. I do not think I venture too far in my praise of this plant in anticipating that everyone who sees it for the first time in its best condition will desire to have it in his greenhouse next season.

Growing this plant is simplicity itself. The fine tendrils are the only difficulty, as they grow rapidly, and must in their progress be kept under control and fixed as they extend. The dry tubers, of the size of a Chestnut, should be placed singly in large 60's early in August in peat and silver sand as soon as the fragile fresh tendril becomes observable in the flowering pot of the previous season, where it has been left quite dry from finishing flowering in the spring. The tubers should be barely covered, and the tendril left quite exposed.

To any ordinary wire trellis of balloon or other shape I have given preference by transferring the plants from their quarters in 60's to wire baskets suspended 7 feet high across the passage round the greenhouse. The baskets are lined with moss, supplying as much soil as the former can fairly take. The object is thus gained, after training the lead to the lowest point of the basket, to be able to wind it round its curving sides, and gradually round its widest circumference.

Watering must be done sparingly until growth becomes relatively rampant. The amount of flowering on the greater part of the entire length of the tendrils depends on a very light and airy position, where they represent a dream of beauty for about a month.—H. H. R., *Forest Hill.*

ANEMONES AND RANUNCULUSES.

THESE two flowers, which have both been great favourites in our gardens for ages past, belong to the same natural order—Ranunculaceæ, of which the common yellow Crowfoot of our fields is the type and representative. The garden Ranunculus came originally from the milder climates of lands bordering on the Mediterranean, but has now been cultivated in this country for the last three centuries. Gerard reared them, as he tells us, in 1594; Parkinson in 1629 enumerates eight varieties; and Ray, forty years later on, increased the list to twenty-five. It was not, however, till the middle of the last century that the Ranunculus, like some other flowers, reached the height of popularity, and became in great demand. Then numbers of new sorts were reared, and florists, we are told, became absolute idolators of the beauty and variety of their colouring.

The Anemone is a native of the same parts as the Ranunculus, and was introduced to England from Italy towards the close of the sixteenth century. Like many other plants in its wild state, it has its flowers single; but the corolla can be multiplied almost indefinitely by the conversion of its stamens and pistils into petals under judicious culture. The Anemone takes its name from a Greek word signifying wind flower, an appellation actually bestowed upon it by our forefathers, from the circumstance of its growing naturally in open plains or exposed situations, where its feathery grains produce a singular shining appearance when waved by the breeze.

When first introduced there were only a few species, but since then Art has so increased the varieties of this light and graceful favourite, that florists have long since ceased to attempt to distinguish them by individual names. The colours, both of the Ranunculus and the Anemone, are clear, rich, and brilliant, partaking of almost every hue, and are either in single uniform tints, or mottled with stripes and patches.—WM. NORMAN BROWN.

LAWNS AND ALLIED SUBJECTS.

(Continued from page 298.)

THE TENNIS LAWN.

THE popular pastime of lawn tennis being now regarded as an institution in gardens, it holds, in relation to our subject, a prominent place. There are, indeed, few places where the tennis ground is not in evidence; too much so, one may say, by reason of the exposed position it often occupies. In many cases, owing to limitation of the grounds, this is, of course, unavoidable; but many there are in which this most important consideration appears to have been overlooked, hence what is considered an ideal position (fig. 64), illustrates the meaning, whilst the points in its favour may briefly claim attention.

In the first place it must be stated that in considering the limited area with which we are dealing, any question of primarily selecting

billiard table. *Apropos* of this it may be repeated that a dead level is seldom desirable, even with a tennis ground, but in this case it will be remarked that the made-up portion sank sufficiently to give the slight fall desirable, such sinkage being regular, unnoticeable, and inappreciable so far as the playing was concerned, but sufficient to obviate any lodgment of water. The space actually required for marking out the tennis court is 78 by 36 feet; to this a margin of 10 feet at each end is advisable, with 6 feet on each side, or, at a rough calculation, the prepared ground will be 100 by 50 feet.

It is important that the tennis ground, whatever margin may be allowed over actual requirements, should be correctly rectangular, thus facilitating the initial marking out and necessary measuring each season. Markers, when placed at each corner and at each end of every white line, will save considerable labour during wet weather, when the lines are generally obliterated. Special iron pins with flat square heads are sold for the purpose; but I prefer those made by a country blacksmith as being stronger, the former being liable to lose their heads.

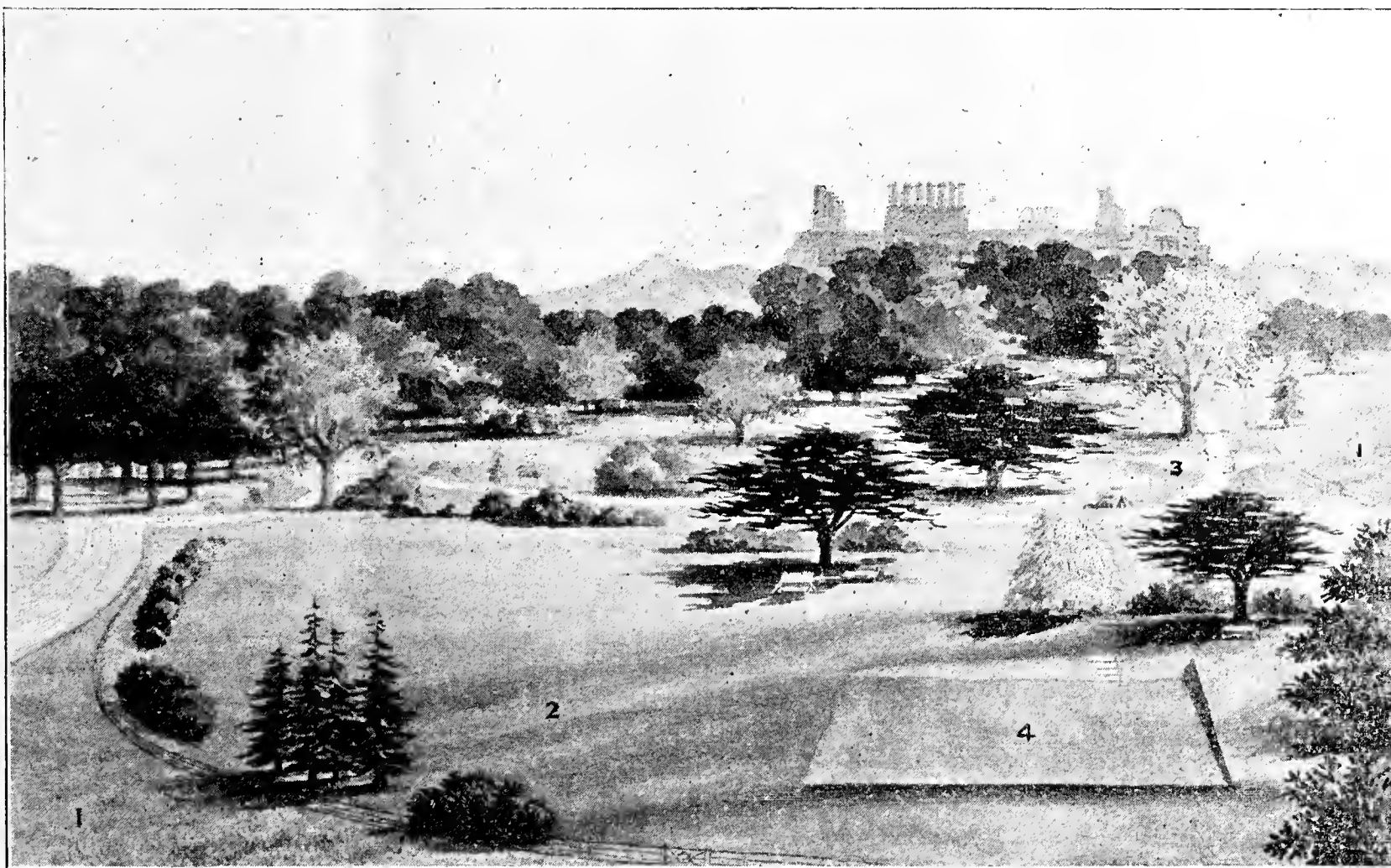


FIG. 64.—THE TENNIS GROUND—AN IDEAL POSITION.

References.—1, Portion of Park; 2, Pleasure Grounds and Seats under Trees; 3, Steps with Vases; 4, Tennis Ground on Sloping Lawn.

the most level ground obtainable for the scene of operations need not be entertained. A little explanation of the view given will, however, be the best interpretation. Proximity to the residence is the first point in its favour, whilst the privacy afforded by the screen of foliage, which not only almost excludes the building from view but the carriage approach to it, so that visitors calling avoid that rather awkward *contretemps* of seeing the family when "not at home." Ample shelter on a hot day is also afforded to on-lookers by seats being freely disposed under some fine trees in the foreground, as well as to players from a passing shower, whilst the view commanded from this sequestered nook, embracing a broad sweep of the park, is, to say the least, satisfying.

As will be noted, the position is on rather sharply falling ground towards the park railing as well as longitudinally. The fall lengthwise of that portion comprising the tennis ground being previous to levelling 4 feet. This necessitated an excavation of 2 feet at the corner where the grass steps are formed, and the raising of the lower end by 2 feet with the soil removed. The hard pan existing at the excavated end was well broken up, and special precaution taken that the made-up portion at the lower end was well consolidated by ramming and tramping as the work proceeded. Previous to turfing a liberal dressing with the compost previously prescribed was given to it, and when completed the new tennis ground was as level as a

Experience teaches the value of observing what may be considered as trifles; hence such details are thought to be worthy of inclusion here. "Please have the tennis ground marked at once," is an order not infrequently given, and a rather nice operation which few workmen accomplish as I, at least, like to see it; so, with the assistance of a boy, generally do it myself. Good whiting is the only satisfactory medium for marking, and this, mixed with water to the consistency of thick cream, is easily applied with one or other of the machines generally used. Mowing the tennis lawn when in frequent use must enter into our calculation. In this case, the best method is to make a daily operation of it; it is then always ready.

In the place from which the illustration is taken the rule is for one of the pleasure-ground men to run his hand machine—one of the light running 16-inch mowers, with the grass-box attached—over it every morning before breakfast, weather permitting; and it is preferred to keep the one machine specially for this purpose. A daily run with the roller over new-made grounds is advisable. "What a lot of pains you take with your tennis ground," a neighbour remarked. True, it was admitted; but the "lot of pains" experience proves to give least trouble in the long run, with satisfaction to all concerned.—SYLVA.

(To be concluded.)

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—"VICTORIAN ERA FUND."

READERS will doubtless remember that this fund was established last year to commemorate the completion of the sixtieth year of her Majesty's beneficent reign. They will also recollect that its object is to temporarily assist unsuccessful candidates whilst awaiting election, who have been (or their husbands) subscribers to, or life members of, the Institution. The total amount received up to December 31st last has been invested, and the Committee are glad to be able to announce that the income derivable therefrom this year enables them to distribute the sum of £106 10s., the first half of which was sent on April 1st last to eighteen unsuccessful candidates as follows, and has been divided at the rate of 15s. for each year they (or their husbands) had subscribed.

	Years	Self or Husband	Amount sent
	subscribed.	April 1st, 1898.	
Bryan, Andrew	13	£4 17 6	
Nixon, Francis	13	4 17 6	
Plevy, James	12	4 10 0	
Staples, George	11	4 2 6	
Wood, Caroline	11	4 2 6	
Gibbons, John	10	3 15 0	
Watt, James	10	3 15 0	
Hackwell, Elizabeth	9	3 7 6	
Wills, George	9	3 7 6	
Barnfield, Alfred	8	3 0 0	
Hatch, Annie	8	3 0 0	
Mitchell, Lucy	7	2 12 6	
Shearn, Joseph	7	2 12 6	
Lee, Alexander	5	1 17 6	
Evans, Thomas	4	1 10 0	
Gould, William	2	0 15 0	
Thomas, William	2	0 15 0	
Woodward, Emma	1	0 7 6	

From the above it will be seen that the aggregate number of years of subscription is 142, which, at 15s. each year, gives a total of £106 10s., the first instalment of which, as already stated, was sent on April 1st last, and the remainder will be sent on October 1st next. The Committee are very anxious to bring up the total amount of this fund to £5000, to do which they require a sum of £925, and I should like to draw attention to the generous offer made by N. N. Sherwood, Esq. (Trustee), to contribute £50, provided the amount required be raised, in response to which the following gentlemen have each kindly promised a similar sum. Arthur W. Sutton, Esq., Reading; Leonard Sutton, Esq., Reading; Harry J. Veitch, Esq., Treasurer, and several smaller contributions have been already received. The Committee sincerely hopes before the close of the year to be able to announce that the balance necessary to make up the £5000 has been received. It is trusted therefore that every well-wisher of the Institution will note that the "Victorian Era Fund" is still open, and that donations to it will be most gratefully received. The Committee also desire again to emphasise the notice which has already appeared in your columns, and elsewhere, that this fund is intended for the benefit of those only who have subscribed to the Institution.—G. J. INGRAM, *Secretary*.

FRENCH AND AFRICAN MARIGOLDS.

THESE may be accepted as illustrating the aphorism of Longfellow—"Things are not what they seem"—because they are neither French nor African, nor are they yet Marigolds. An account of both plants is to be found in "Stirpium Historiæ" (1582), and from this we are able, with a little help from other quarters, to arrive at a definite conclusion as to why these inappropriate designations came to be applied to them. Both were termed africanus because it was believed they grew wild in many places in Africa, and it was current they had been brought thence by Charles V. of Spain on his return from Tunis in 1535-36. Another account had it that they were brought by Germans from Peru. Some also discovered in them the Petilium Flos of Pliny, and the French, as a matter of fact, accepted Tagetes patula as identical. In England it was called French Marigold because, as an old writer affirms, "the French taught us how to cultivate this flower." From the "Scots Gardner" (1683) we discover from its absence that the French Marigold was unknown at least to the Scottish horticultural literature of that period.

Miller mentions eleven varieties of the African Marigold as being in cultivation about the middle of last century. Of these the varieties which interest us most are the "double" forms, or those with flat florets, and the "fistulous," or those with quilled petals. This predilection for quilled Africans has continued to the present day, with the result that a flat-petalled flower shown against a quilled has, with not a few judges, only a slight chance of obtaining a prize. An essential point in the culture of this plant for exhibition, after securing a first-class strain, is to grow one stem only to each plant, and rigorously to remove all side growths, in order that the whole strength of the stem may be directed to the one flower which crowns its summit. A too rich soil conduces to coarseness as well as size, and it is better to depend on dressings applied as required than to overload the soil with manure previous to planting. The Orange and the Lemon are the forms now esteemed most highly for exhibition.

From the above the selection and treatment of the French Marigold widely differs. It is, moreover, a more useful plant, the very dwarf single

and double varieties being of much service for a certain class of bedding. The dwarf forms, however, are by no means new, for we find them named over a century ago. Hill says, "Choose the best striped of the French Marigold, and the largest and most quilled of the African," and such flowers secure the best prizes at the present day.

It is a fact not without interest that one plant of French Marigold, grown in well-worked soil, but not too rich, and allowed space for free development, will produce continuously blooms single, double yellow, double red, and striped of the highest quality. For this reason only a few plants are required for the production of exhibition blooms.

It is a mistake to sow either of these Marigolds earlier than April; from beginning to end, according to locality, being a suitable time. The aim of the cultivator should be to grow the plants without check, and this is effected with the greatest certainty when the seedlings appear sufficiently late in spring to secure a share of genial weather from their earliest appearing.—R. P. BROTHERSTON.

NOTES ON ALPINE FLOWERS.

(Continued from page 262.)

PRIMULA MARGINATA.

SOME of the choicest of our Alpine flowers are to be found among the Primulaceæ, and in that beautiful family what are known as the Primula species hold a prominent place. Some of these are comparatively difficult to grow, but others are easily cultivated in the rock garden. Included among the plants passing under the name of "Primula species" are several hybrids and varieties, more or less marked, of true species. The subject of this note—Primula marginata of Curtis—has some variation in shade of colour and in size of flower, but all the varieties resemble each other in every material point.

In Mr. J. G. Baker's synopsis of the European species of Primula, read at the Primula Conference of the Royal Horticultural Society in 1886, P. marginata was included in Group III.—Auriculastra. It comes from the Alps of Dauphiné and Piedmont. It is easily recognised by the white margins round the toothed silver-grey leaves, which make the plant very attractive, even after the flowering period. The Margined Primrose grows from 2 to 6 inches high, and thrives best in a partially shaded position in a light soil not too dry. The colour is called by Mr. Baker "lilac," and by others "violet-rose." The latter is, the writer thinks, nearer the colouring as grown outdoors and without covering. This colour, as has been mentioned, varies, and among the best forms are Dr. Stuart's variety and major. The most distinct in colour is known as P. marginata var. cœrulea, and is of a pretty bluish tint not frequently met with in the genus except among the new blue Primroses now attracting so much attention. This Primula can be confidently recommended, and requires less care than many others. The Margined Primrose is increased by means of division.

AUBRIETIA TAURICOLA.

One might devote more space than is at present at command to expatiate upon the beauties of the Aubrietias, and their uses in the rock garden. In spring their purple, violet, or rose flowers are of striking effect, depending from the ledges of the rocks or draping a large stone with a sheet of brilliant flowers. A. tauricola is a beautiful little variety of more compact habit than many of the varieties of A. deltoidea, to which it seems to belong. This renders it suitable for association with the more select alpine. The flowers are also of a good colour and size, so that the plant which passes under the name of A. tauricola is one deserving of attention from Alpine growers. It may be that it is the same as the Aubrietia grown at Kew as A. deltoidea var. taurica, but the writer has not at present an opportunity of comparing the plants.

ALYSSUM MONTANUM.

Mountain Madwort is the alliterative English name of this very pleasing little Alyssum. It comes from the Alps and Pyrenees, and has been in cultivation for many years. Like a large number of the perennial Madworts it has yellow flowers. These are in simple racemes, and are only a little above the spreading tuft formed by the stems and leaves. The leaves are rough and of a dull greyish green. Some growers appear to have a difficulty in keeping Alyssum montanum for any great length of time. After some winters it has looked a little unhealthy in this garden, but has always recovered. It is grown in light soil in the upper pockets of a low rockery, but is kept well supplied with water in continued dry weather. The Mountain Madwort is easily raised from seeds, and may also be increased by means of cuttings.

PENTSTEMON CONFERTUS.

This is Douglas's name for a very dwarf and hardy little "blue" Pentstemon, grown also under the names of confertiflorus and procerus. Under the name of P. confertiflorus seeds are offered, and plants may also be seen catalogued as P. procerus. Its English name is the Whorled Pentstemon. A very pretty little plant it is, of dwarf habit, only growing from 7 or 8 to 14 inches high, and producing many racemes of blue purple-veined flowers. The leaves are lance shaped, and this Pentstemon is a very desirable alpine, and is quite hardy in the rock garden or border in almost any soil. It is increased by division as well as by seeds.—ALPINUS.

(To be continued.)

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—APRIL 12TH.

THE exhibition on Tuesday was one of the finest that has been seen in the Drill Hall at this season of the year. Almost the whole of the available space was occupied with floral exhibits of high quality. Orchids were admirably though not extensively shown, while exhibits for the Fruit Committee were very few. Narcissi were staged in superb condition.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); Rev. W. Wilks, with Messrs. J. H. Veitch, A. F. Barron, T. Fife, J. Willard, G. Norman, G. Reynolds, J. Smith, J. T. Miles, G. Sage, M. Gleeson, W. Bates, F. Q. Lane, C. Herrin, A. Dean, and J. Wright.

Only a few products were placed on the table for examination, but these were distinctly meritorious, and met with prompt recognition.

Mr. J. Miller, Ruxley Lodge, Esher, sent a large box of Mushrooms. They were grown on ridges in the open air, and were remarkably firm and fine. Mr. Miller is an adept in this method of growing the delicious esculent. A cultural commendation was unanimously awarded.

Mr. McLeod sent from Dover House, Roehampton, a box of splendid Brown Turkey Figs, gathered from a trained tree, covering a space 6 by 18 feet, and now carrying 470 fruits, of which these were fair samples, and excellent they were. A cultural commendation was voted unanimously.

Mr. E. Beckett sent from Aldenham House, Elstree, a large basket of Laxton's Royal Sovereign Strawberry. The fruits were very fine, firm, and richly coloured, meriting the cultural commendation which was promptly granted.

A dish of a small well-coloured seedling Apple from Mr. W. W. Bull, Ramsden, Billericay, was placed on the table—fruits small, round, and coloured. They were somewhat shrivelled. The Committee desired to see others next year in a firmer condition.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. J. Fraser, O. Thomas, C. T. Druery, R. Dean, J. H. Fitt, G. Stevens, W. Howe, J. F. McLeod, T. Peed, C. J. Salter, J. W. Barr, J. D. Pawle, H. J. Jones, C. Jeffries, C. E. Shea, D. B. Crane, E. Beckett, H. J. Cutbush, G. Paul, J. Fraser (Kew), E. T. Cook, H. Turner, and E. Mawley.

The large group of Cinerarias arranged by Messrs. J. Carter & Co., Holborn, was very effective. The plants were of medium height, many of the flowers being of good form and rich in colour. They were interspersed with Maidenhair Ferns, and backed by small Palms. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, staged a small collection of Alpines, amongst which were noted many charming and interesting plants. Messrs. J. Hill & Son, Lower Edmonton, were represented by a handsome exhibit of Ferns, comprising many species and varieties, all in excellent health. Well grown and flowered plants of *Azalea indica* were shown by Mr. W. Kemp, Barnes. The colours were very bright. Along the front of the table were fine pots of *Lily of the Valley*. Messrs. W. Paul and Son, Waltham Cross, exhibited in their customary admirable condition *Camellias*, both in a cut state and plants. The flowers were of fine substance and the colours rich. Prominent amongst the varieties were *L'Insubria*, *Princess Charlotte*, *The Duchess*, *Beali*, *L'Avenir*, *Cup of Beauty*, *Mathotiana*, *Montironi*, *C. M. Hovey*, and *Beauty of Waltham*. The five boxes of *Maréchal Niel* Roses shown by Mr. J. Walker, Thame, were the most fragrant feature of the show. The flowers were full and of rich colour. Messrs. R. Wallace & Co., Colchester, sent a capital collection of *Erythroniums*, together with *Fritillarias*, *Tulipa Greigi*, *Irises*, and other flowers.

Hybrid *Streptocarpus*, with a few Ferns and Palms, formed the exhibit from Messrs. J. Laing & Sons, Forest Hill. The flowers were particularly conspicuous for size and substance. Mr. W. Rumsey, Joynings Nurseries, Waltham Cross, sent a large number of Roses, comprising many of the best known varieties. These were *Maréchal Niel*, *Niphetos*, *Général Jacqueminot*, *Charles Lefebvre*, *Ethel Brownlow*, *Elise Fugier*, and the charming *Mrs. Rumsey*, with its shapely flowers borne on long stems. Messrs. W. Cutbush & Sons, Highgate, staged well-grown plants of *Deutzia Lemoinei*, *Staphylea colchica*, and dwarf *Laburnums*. Roses in pots from Messrs. Paul & Son, The Old Nurseries, Cheshunt, were attractively beautiful. Some of the best were *Innocente Pirola*, *Caroline Testout*, *Elise Fugier*, *Clara Watson*, *Captain Hayward*, *Mrs. R. G. S. Crawford*, *Madame Hoste*, and *Antoine Rivoire*, with several of the dwarf *Polyantha* varieties. Primulas in extensive variety were shown by P. Purnell, Esq., Streatham Hill. As a rule the plants were well grown, and flowering freely. Messrs. Barr & Sons, Covent Garden, sent a small collection of Hyacinths, in which several of the leading varieties were observed. Mr. Charles Turner sent from the Royal Nurseries, Slough, baskets of *Nepeta glechoma variegata*, an old but very charming plant for the purpose.

One of the most effective exhibits was that staged by Mr. H. B. May, Upper Edmonton. It was composed of grandly grown plants of *Crimson Rambler Rose*, with *Hydrangeas*, Ferns, *Spiræas*, *Acers*, and other plants effectively disposed in a semicircle. Mr. May also sent small plants of *Begonia Gloire de Lorraine*, which is evidently useful for spring as well as winter flowering. Mr. Miller, gardener to Lord Foley, Ruxley Lodge, sent several bunches of fine Violets. Mr. H. Walters, gardener to Lord Gerard, Eastwell Park, Ashford, showed Roses in variety, the flowers of *Maréchal Niel* being particularly good.

On the floor in the centre of the hall Messrs. Sutton & Sons, Reading, had a group of plants of what they call *Cineraria stellata*, which is a selection from *C. cruenta*. The plants were tall, and carrying graceful trusses of many coloured flowers. Almost all the colours found

in the garden varieties were represented. The plants were clothed to the pot with foliage. Messrs. J. Veitch & Sons, Ltd., Chelsea, sent a group of hybrid *Cinerarias* resulting from a cross between *C. cruenta* and garden varieties. Some of the plants were from seeds and others from cuttings, the former being very much freer flowering and of more graceful habit. The colours were well diversified. The same firm sent also *Deutzia Lemoinei*, *Azalea obtusa alba*, *A. carminata splendens*, *Rhododendron racemosum*, and several other plants. Mr. W. Bardney, gardener to Sir Peter Walker, Osmaston Manor, Derby, staged spikes of different varieties of *Clivia miniata*. The flowers were of great size and the colours exceptionally rich. Mr. E. Beckett, gardener to Lord Aldenham, Aldenham House, Elstree, showed a basket of a form of *Deutzia gracilis* with variegated leaves.

NARCISSUS COMMITTEE.—Present: J. Bennett-Poë, Esq. (in the chair); with Miss Willmott, and Messrs. De Graaff, W. Ware, R. Barr, G. H. Engleheart, C. Macmichael, Kingsmill, J. Walker, and Scrase Dickens.

Mr. Miller, gardener to Lord Foley, staged a few Narcissi, including *incomparabilis stella*, *Burbidgei*, *Leedsii*, *Duchess of Brabant*, *princeps*, and *Emperor*. Mr. T. S. Ware sent a collection of Narcissi, comprising many flowers of fine quality, such as *Victoria*, *maximus*, *Glory of Leyden*, *Horsefieldi*, *M. J. Berkley*, *Sir Watkin*, *P. R. Barr*, *Grand Duchess*, *Catherine Spurrell*, *albicans*, and dozens of others. The Narcissi shown by Messrs. J. Veitch & Sons were remarkable for the excellence of the quality. There were grand examples of *princeps*, *Golden Plover*, *Gloria Mundi*, *Barri conspicuus*, *Horsefieldi*, *maximus*, *Captain Nelson*, *Princess Mary*, *Sir Watkin*, *Chieftain*, *Emperor*, *Queen Bess*, *Empress*, *Mary Anderson*, *Glory of Leyden*, *F. W. Burbidge*, *Flora Wilson*, *Mrs. W. T. Ware*, *Beauty*, and others.

Messrs. Barr & Son, Covent Garden, were represented by a superb exhibit of Narcissi. The flowers were of fine size and great substance, the colours being particularly clear and bright. Amongst the many excellent varieties were *obvallaris*, *Barri conspicuus*, *King of the Netherlands*, *Sensation*, *Flora Wilson*, *M. J. Berkley*, *Ellen Barr*, *Mrs. W. Ware*, *P. R. Barr*, *Sharman Crawford*, *Duchess of Westminster*, *Constance*, *Grand Duchess*, *Madame de Graaff*, *Hogarth*, *maximus*, *Backhousei*, *Portia*, *Golden Spur*, *Gloria Mundi*, *King of the Netherlands*, *St. John's Beauty*, *Goliath*, *Minnie Hume*, *Henry Irving*, *Maurice Vilmorin*, *Hume's Giant*, *Princess Mary*, *William Goldring*, *Princess (double)*, *Fred. Moore*, *Katherine Spurrell*, *Wcardale Perfection*, *Beauty*, *John Bain*, *Sir Watkin*, *Victoria*, *Empress*, *C. J. Backhouse*, *Emperor*, and *poeticus ornatus*. This was probably one of the finest groups of Daffodils Messrs. Barr and Son have ever staged.

NARCISSUS COMPETITION.—The Rev. G. H. Engleheart, Andover, secured the premier prize for a collection of Daffodils. His exhibit was comprised of seedlings, many of which were of high quality. J. W. Jones, Esq., Woking, was adjudged the second prize with a very creditable exhibit.

ORCHID COMMITTEE.—Present: S. Courtauld, Esq. (in the chair); with Messrs. J. O'Brien, de B. Crawshay, R. B. White, H. M. Pollett, H. J. Chapman, F. J. Thorne, W. H. Young, W. H. White, W. Cobb, T. W. Bond, H. Ballantine, and F. Mason.

Mr. F. J. Thorne, gardener to Major Joicey, Sunningdale Park, Sunningdale, sent a number of grandly grown plants of *Epidendrum bicornutum* flowering as this Orchid is unfortunately seldom seen. Mr. Thorne sent also a plant of *Dendrobium atro-violaceum*, carrying a splendid spike of flowers. Mr. W. King, gardener to J. Colman, Esq., Gatton Park, Reigate, showed a few Orchids in good condition, the plants being well flowered. Mr. W. H. Young, Orchid grower to Sir F. Wigan, East Sheen, staged a grand spike of *Coelogyne pandurata*. Mr. H. J. Chapman, gardener to R. I. Measures, Esq., Camberwell, exhibited a group of Orchids, comprising *Angræcum modestum*, *Dendrobiums*, *Cattleyas*, *Cymbidiums*, and several others in good health. Mr. J. Bradshaw, The Grange, Southgate, staged *Cattleyas*, *Odontoglossums*, and *Cymbidiums*, in good variety and fine condition.

From Mr. H. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Dorking, came *Eulophiella Peetersiana*, *Cypripedium Olenus* Burford variety, *Odontoglossum nebulosum candidum*, *Dendrobiums crassinode*, *crepidatum*, *micans*, *Epiphronites Veitchi*, *Odontoglossum coronarium* *miniatum* var., *Polystachya Ottoniana*, *Leptotes bicolor* and *Odontoglossum Pescatorci* Prince of Orange. Messrs. J. Veitch & Sons exhibited a bright collection of Orchids, amongst which were *Epidendrams*, *Lælias*, *Dendrobiums*, *Cymbidiums*, a new hybrid *Phalenopsis* named *Stuartiano-Manni*, *Epidendrum elegantulum leucochilum*, and others. Smaller exhibits of Orchids came from Baron Schröder, H. T. Pitt, Esq., A. Warburton, Esq., and many others.

CERTIFICATES AND AWARDS OF MERIT.

Amaryllis Daones (J. Veitch & Sons).—A very distinct variety. The central colour is bright orange red, and each segment has a margin of white (award of merit).

Camellia Mrs. J. Buchanan (W. Paul & Son).—A semi-double variety, of which the flowers are blush, spotted, splashed, and flaked bright scarlet (award of merit).

Camellia Duchess of Teck (W. Paul & Son).—This is a finely shaped double; the colour is rich rose (award of merit).

Camellia Pride of Waltham (W. Paul & Son).—A dwarf-habited variety with silvery-rose flowers. The flowers are large and substantial (award of merit).

Cypripedium Olenus, Burford variety (W. H. White).—A magnificent variety, in every respect superior to the type, which was a hybrid resulting

from a cross between *C. bellatulum* and *C. ciliolare* (first-class certificate).

Dracæna aurca striata (H. Low & Co.).—A broad-leaved handsome form, of which the name tells the colour. It has the appearance of being a vigorous grower (award of merit).

Epidendrum elegantulum leucochilum (J. Veitch & Sons).—A lovely Orchid, of which the sepals and petals are yellow, and the lip pure white (award of merit).

Eulophiella Peetersiana (W. H. White).—This is a superb Orchid. The prevailing colour is deep rose, with a suffusion of purple. The tubular lip has the normal colour on the front lobe, and a white throat with rose veins, and a flush of yellow (first-class certificate).

Narcissus Oriflamme (G. H. Engleheart).—A lovely variety, of which the segments are cream, and the crown very bright orange (award of merit).

Narcissus Homer (G. H. Engleheart).—Probably the finest poeticus that has been shown. The colour is pure white, and the crown glowing crimson (first-class certificate).

Narcissus Lucifer (G. H. Engleheart).—A good incomparabilis. The segments are cream, and the crown orange yellow (award of merit).

Narcissus White Queen (G. H. Engleheart).—A pale Sir Watkin. The segments are glistening cream, and the trumpet pale yellow (first-class certificate).

Narcissus Lady Margaret Boseawen (G. H. Engleheart).—A handsome variety. The segments are white, and the cup pure yellow (first-class certificate).

Narcissus Apricot (Barr & Sons).—The trumpet of this variety is pale yellow, and the segments creamy white (award of merit).

Narcissus Lady Helen Vincent (Barr & Sons).—A grand variety. The immense trumpet is pure yellow, and the broad segments pale canary yellow (award of merit).

Odontoglossum Wilckeanum Pitt's variety (H. T. Pitt).—A superb form of the type. The chocolate patches and spots are superb (first-class certificate).

Odontoglossum crispum Lindeni (A. Warburton).—A small-flowered variety. The large blotches on sepals, petals and lip are chocolate brown (award of merit).

Phalenopsis Schroderæ (H. Low & Co.).—A hybrid resulting from a cross between *P. leucorrhoda* and *P. Portei*. The petals and sepals are white, very delicately flushed, and with a few brownish spots on the lower sepals. The lip is white, with rose and yellow markings (award of merit).

Phalenopsis Stuartiano-Manni (J. Veitch & Sons).—The above name tells the parentage of this hybrid, of which the flowers are intermediate in size between the parents. The ground colour is buff yellow, and the numerous spots dull crimson (award of merit).

MEDALS.—The following medals were awarded:—Floral Committee: Silver-gilt Banksian to Mr. H. B. May; silver Flora to Messrs. W. Paul and Son, W. Rumsey, and Paul & Son; silver Banksian to Mr. J. Walker; and bronze Banksian to Messrs. W. Kemp and H. Walters; and bronze Flora to R. Wallace & Co. and J. Carter & Co. Narcissus Committee: Silver Flora to Messrs. Barr & Son, and a silver Banksian to Messrs. J. Veitch & Sons, Ltd. Orchid Committee: Silver Banksian to Messrs. F. J. Thorne, J. Bradshaw, J. Colman, and J. Veitch & Sons, Ltd.

CHIONODOXA LUCILIÆ AND ITS ALLIES.

I CANNOT but take somewhat of a paternal interest in this beautiful bulb. It is now about seventeen years since Mr. George Maw brought it under the notice of English gardeners, having found it in Asia Minor; and a figure of it appeared in the "Garden." A copy of this I sent to Mr. Edward Whittall, asking him if he knew it, and whether it were procurable. He said, "Yes, in any quantity." Most of the leading nurserymen to whom I communicated this intelligence wished me to order them a quantity, and some 60,000 bulbs were sent over, and I shall never forget my consternation when, on opening the first consignment of some 10,000 bulbs, I found them all rotten, owing to their having been packed in some material which fermented. However, the losses were soon repaired, and the bulbs were distributed.

Some experts said that they believed, when they received their bulbs, that most of them were *Scilla bifolia*, and when in the spring a few of the more forward ones flowered, and one or two appeared first as *Scilla bifolia*, I began to be afraid that the venture was an unsuccessful one. But I had confidence in Mr. Whittall's botanical knowledge, and I was not surprised to find that these were only exceptions, and that the vast majority were really *Chionodoxas*. Some German travellers were soon on the track, and sent over a large number of bulbs, which brought down the price, and it has since been cultivated in every part of the kingdom, and has proved to be one of the most beautiful and easily grown of the spring bulbs.

I planted bulbs in a border about 40 feet in length, and a few years afterwards sowed a number of seeds in the opposite border, and these have flowered every year. The border was originally about 1 foot wide, but so rapidly have the plants increased and spread that it is now double that width, and is rapidly filling up the whole of the space. The time of their flowering is one to me of great pleasure. They came in full flower just prior to the recent terrible storm of wind and snow, and when they were bending beneath 4 inches of snow I thought their glory was departed for this season. But, no! The snow melted, and I was surprised to find

that, fragile as they seem to be, they were none the worse for the experience. So well do they deserve the name of "The Glory of the Snow."

I have been somewhat surprised that although millions of the *Chionodoxa* must now be grown, that there is such little variation in them, and that they have not been made the subjects of cross-hybridisation, or at least, if so, they have given no great results. White ones have appeared, but personally I consider the peculiar charm of the *Chionodoxa* is the lovely cerulean blue, and therefore, when that is absent, the plant is not nearly so interesting. As I have already intimated, it produces its seed freely, and if this is gathered when ripe, or nearly so, and sown at once in the open, every one of them will germinate. I do not think *sardensis* is nearly so beautiful; it is a deeper blue, and lacks the white which so effectually tends to show off the beauty of *Luciliæ*. Neither do I think that there is any great charm in the varieties *C. Alleni* and *C. gigantea*. The latter has certainly larger flowers, but they are more sparsely produced, while *C. Alleni* has broader and more massive foliage, and the colour of the flower is a shade lighter.

I have never known them in my garden to afford a pasturage for slugs, while the closely allied *Scilla sibirica* has its blooms constantly destroyed by these depredators; but a friend of mine, who is a successful cultivator of herbaceous flowers and bulbs, says he can never keep them in his garden owing to their attacks, while I can say the same about *Puschkinia scilloides*. In fact the peculiar tastes of slugs are very amusing. If one grows a number of *Delphiniums*, and has among them *D. belladonna*, the slugs will travel some distance to get to it, and leave the others untouched. Why in one garden they should devour the *Chionodoxa*, and in another leave it alone, I cannot understand. *Scilla bifolia* is another charming bulb, of which the flowers are of a light delicate blue, small, but freely produced. They are earlier than the other bulbs named, and seem able to stand any weather. There are some which seem to flower earlier than the others, but whenever they do bloom they are acceptable. They succeed admirably in pots, and are a very valuable addition to the greenhouse in the early part of the year.

With the departure of the charming bulbs of this family we may say that the first flush of spring is over. It is true that the glory of the Daffodil has begun, and will continue to brighten our gardens, and those which have been a mass of blue will now be full of golden light; but beautiful as they are, there is not the same sentiment about them that there is about the Snowdrop, Crocus, Primrose, Cyclamen, and Scillas; and though there can be for me but a few opportunities for again seeing them, we must be thankful in having them to gladden our path.—D., Deal.

AMARYLLIS AT CHELSEA.

THE season of Easter may in the horticultural world be taken as representing about the time when the Chelsonian *Amaryllis* will be in flower. It does not indicate the zenith of their beauty to the very day, or even week; but it is sufficiently near to serve as a general guide. Easter does not come at precisely the same time every year, but it is an ever welcomed festival. The *Amaryllis* are not at their best at the same time every year, but they come as an ever appreciated spectacle. In fact, the display has become one of the sights of London at this season of the year, and it is one of the best worth the seeing. For many years in succession we have visited Chelsea to see the *Amaryllis*, and we have always been interested, and never failed to admire the ornately beautiful flowers.

It is not possible now, as it was some few years ago, to see wonderful advances each succeeding season. The standard of excellence that has been attained to does not permit of this. But one can see a change, and it is not in size, substance, and form of flower so much as in the increased number of colours. Dark self-colours have long been abundant, and now Mr. J. Heal, the celebrated Chelsea grower, strives for lighter colours with as much success as could be expected, considering the limited material with which he is forced to work. He has succeeded in getting a trace of yellow in one variety, and he hopes to increase its depth and tone. Now, it is scarcely more than a suffusion in the greenish white basal colour of the segments, and if it can be so developed as to produce a pure yellow, then will the grower have reached almost to the summit of his ambition. A yellow *Amaryllis* or *Hippeastrum* is somewhat like a blue *Chrysanthemum*—much sought for, but not yet likely to be found.

The splendour of Veitch's *Amaryllis* house is such as one can seldom see, and it is a matter for surprise that more of these stately plants are not grown when their beauty is borne in mind. That they are becoming more popular there can be no doubt; but they are not grown in sufficient quantities in the majority of gardens to permit of their full merits being recognised. An isolated plant or two amidst others of a different nature cannot convey an idea of the beauty of a collection of several dozens in one bold mass. They are certainly handsomer than many plants more extensively cultivated, and it cannot be said that their culture involves a great amount of trouble. The details given in the article by Mr. Ireland on page 300 of the *Journal of Horticulture* are admirable, and if adopted will undoubtedly be followed by success. Let us hope they will be more and more grown in the future, for they are well worthy of careful attention.

It has been said that the number of new varieties of greater merit than those existing, is smaller year by year than it was, say, a decade ago, but there are several of which record ought to be made. Some have, of course, been shown at the Drill Hall, but others have not been at their best on a show day, and could not be exhibited though quite as good as those that have received the award of merit of the Royal Horti-

cultural Society. The varieties of which notes were taken were not selected solely because they were of immense size, but rather on account of their richness of colouration, distinctness, or good form. Though size is certainly a desideratum, there are other things to be considered ere a competent judge, such as Mr. Heal, will designate a variety as being in the front rank, and amongst the essential points are those mentioned above. Only about a dozen and a half were chosen, and doubtless since this visit was paid others of equal merit have opened, and of these it is obvious no mention can be made.

Let us commence with *Alares*, which for form of flower could not easily be excelled. Each segment is of good width and exceptional substance, and they combine to make a very beautiful flower. The colour is white, with occasional shadings of soft rose. It is indisputably one of the best. Forming a grand contrast in colour to the last named comes *Harpagus*, which possesses all the desirable attributes of a fine variety. The colour is a particularly rich velvety crimson. Very attractive is *Padusa*, of which the ground colour is white and the markings scarlet. This would find favour with the majority of visitors, as it is quite distinct. Amongst the most imposing must be placed *Emo*, with its brilliant orange-scarlet flowers, that have no trace of the greenish centre to which so many persons object. Of fine shape and striking appearance is *Japetus*, which is crimson-scarlet in shade. The substantial segments are of considerable breadth, and are more even in size than in several of the flowers that were observed.

Favorinus is the one on which the grower pins his faith as promising a fresh break in colour. Throughout the whole of the flower there is a faint suffusion of yellow—not much, but still sufficient to be clearly perceptible. The normal colour of the variety is greenish white, with crimson markings on each of the segments. We shall look with interest to the development of the yellow in future years. A charming *Amaryllis* is *Macenis*. The colour is white, with chaste rose stripes and suffusions from the centre of the segments. One of the darkest in the collection is *Farcinus*, which is velvety crimson. The middle of the flower is singularly deep in hue, and very attractive to visitors. But for the green which forms the centre of the bloom, it is probable that *Jobates* would come very nearly to the top of the tree with connoisseurs, for in shape and substance it is in the front rank. Its colour—pure white with suspicions of bright rose on the upper segments only—too, is very greatly in its favour.

The brilliancy of the scarlet in *Tamaris*, combined with the stout texture and fine shape of the flowers, makes it one of the handsomest in the house, though, so far as the latter points are concerned, it is little, if any, superior to a glowing crimson-scarlet variety that has been christened *Adana*, and a third designated *Zabatus*, and which is also of a crimson colour. The orange-scarlet hue of *Redones* places this with the most distinct, especially when the delicate rose with which it is suffused is observed and appreciated. *Edoni*, scarlet with a white centre; *Raphana*, white with bright red markings; *Uragus*, lively crimson scarlet; and *Varina*, crimson with a flush of purple, are very handsome; while *Clonia*, which received an award of merit from the R.H.S., must conclude the list. The colour of this bold form is white touched with green and striped and margined bright rose. For the dozens of others that are worth an examination readers are recommended to go to the Royal Exotic Nursery at the earliest possible moment.—ANNUAL VISITOR.

RHODODENDRON COLLETTIANUM.

THIS is the name of the shrub represented in the accompanying wood-cut (fig. 65) and which was distributed under the name of *R. afghanicum*, the latter, however, being a new and distinct species from the same region. It is said to be poisonous, and differs from the subject of our note by its campanulated corolla and long exserted bent style. In *R. Collettianum* the style is very short, the flowers in medium-sized bunches of eight to twelve or more, white tinged rose. A well-known writer says, "In most of its characters it closely approaches *R. anthopogon*, from which it differs in its large stature, large straight flowers, and in the tube of the corolla being hairy all down the inside." It reaches 10,000 to nearly 13,000 feet above sea level at Shéndtoi to the ridges of Sikarām, commencing at near the limit of trees, and mixed with masses of Junipers, forming large thickets. For rockeries, or where dwarf shrubs are required in the border this will be found very useful.

HERBACEOUS CALCEOLARIAS.

HERBACEOUS *Calceolarias* present luxuriance of growth, symmetry, and wealth of colour in a remarkable degree; the bold deep green foliage, the large clustering heads of flowers, rich yet soft, and extremely varied in colour, render them worthy of the high rank assigned to them among our floral gems. They are generally treated as annuals, and the certainty and convenience of this method of culture cannot be disputed, old plants being only worth keeping when huge specimens are required for special purposes.

May and June are the best months for sowing the seed, but when it is desirable to prolong the display of flowers other sowings may follow in July and August, in which case it should not be forgotten that considerable space will be required during winter, especially if it is intended to grow large plants such as may be produced in 8 or 10-inch pots; for then,

as the plants gain size, no check must be given to the growth. The few but most important demands for more space for the roots, and for the play of light and air around and among the leaves, must be promptly attended to. When this condition is well looked to the plants make an ample return for every care, by rapidity of growth and the rude vigour with which they flourish. The shifting into larger pots may continue till the flower stems begin to grow, and even after that period, if pinching is practised, as is frequently the case when the aim is to produce plants of an extra size.

The one cultural point of vital importance is to promote the quick yet vigorous growth in the very earliest stages, which is natural to this plant. For this reason I prefer for the seed-pan a compost of old, rich, decayed manure, finely sifted and mixed with an equal quantity of sand, keeping it quite an inch below the top of the pan, sowing the seed on it, and then pressing down gently with a circular piece of wood. A careful damping with water out of a fine rose is then given, and a sheet of glass placed on



FIG. 65.—RHODODENDRON COLLETTIANUM.

the pan, which is taken to a cool house or pit where it can have abundance of light without being fully exposed to the full rays of the sun. So treated the seed vegetates quickly, and the seedlings spring up full of sturdy vigour, are first potted singly in similar soil, and afterwards in a rough rich mixture of manure, turfy loam, sand, and charcoal.

No sifting and very little chopping are required in preparing this compost, in which the roots spread with such surprising rapidity that the plantsman has to be on the alert in the shifting into larger pots; for the roots must not be suffered to fasten on the sides of any pot but that in which the plant is to mature its growth and produce its flowers. To the practised hand the reason for this is obvious enough, but it may be well to point out to the beginner that when a plant becomes root-bound its growth receives a check, often a very necessary one to induce free-flowering, but which is fatal for the time to additional size if such be required. Avoid the use of peat in the culture of these plants. I do not, of course, mean to infer that they will not grow in peat, but a rich coarse soil, such as I have described, is so admirably adapted to their wants as to be altogether preferable. The use of peat in the seed pan is what I most object to, from its propensity to become dry, and the indifferent nourishment it gives to the rootlets of the seedlings.

A glance at healthy *Calceolarias* in any stage of growth is sufficient to convince one that they are gross feeders. Let this but be fully recognised, and be acted upon by affording abundance of rich soil and stimulants, keeping the plants clean—free from aphides and thrips—and with plenty of air and light on all sides, a full measure of success will be the result. The assistance of stimulants, by which I mean liquid manure, is not required till the flower stems appear, when their frequent use is of the greatest value and importance, imparting continued health to the growth, and to the flowers such size, form, and colour as would be quite wanting were liquid manure withheld; it being evident that as the soil of any gross-feeding pot plant is permeated with roots, so surely does it gradually become exhausted. Proof of this is afforded by the decaying or unhealthy foliage, and the short duration of the puny growth of flowers.—L.

NOTES ON PARSLEY.

THERE is probably no product of the garden so frequently in demand as Parsley, unless it be the indispensable Potato, and although there is continuous inquiry for the herb throughout the year, there are many instances where it gets but scant cultural attention. In some gardens Parsley is relegated to out-of-the-way spots, or used as a margin to some other crop, and when sown left very much to chance, the plants not even receiving the attention of timely thinning, so as to give light and space to allow of their becoming strong and fully developed. Sometimes, too, one sowing during the year is regarded as sufficient for all purposes, but those who do so find they have made a mistake at a time when they are left without a remedy.

These remarks, however, have no general application, for the gardener who, whether he has a large or a small supply to find every day in the year, must needs give the subject more than passing notice, and Parsley obtained from the excellent strain now in cultivation certainly provides as pleasant a feature as any other garden crop. The old type, such as one occasionally finds in cottage gardens, although it may possess all that is needed for flavouring purposes, would not call forth any favourable comment either as a garnish or growing plant.

The most densely curled—and this is what constitutes the feature of a summer Parsley—is not usually dependable for outdoor gatherings in winter. Summer and winter uses, however, need special culture and selection of variety, unless, of course, there is adequate provision for growing it under glass, where it is not subject to extremes of cold weather. In such a case the exquisitely curled will be just as suitable for one season as another.

For the earliest summer gatherings I always sow under glass in January or February, which produces strong plants to put out in the beginning of April. They are planted singly in rows from 16 to 18 inches apart, and about 9 inches between the plants. Here they grow strongly, the density of the leaf becomes fully developed, and during the summer months they not only furnish a daily and almost unlimited supply, but the beauty of the plants calls forth unstinted praise from everyone who sees them. Sown in the ordinary way, left unthinned and unattended to, there would be no comparison, and it would be passed by the casual observer, and regarded simply as Parsley. No doubt there is Parsley and Parsley, to use a common phrase, and both may be had from one and the same packet. I have been long since convinced that this everyday plant deserves, as much as any other garden vegetable, the best attention that can be given it.

It may not be generally credited how long these early-raised plants will continue to furnish the daily needs of the kitchen. The present winter could not be taken to prove this, but in severer ones I have had a supply lasting until the new bed is ready the following summer, or some sixteen months from date of sowing. Not that it would be advisable to depend on them for winter and spring use. Three sowings, and sometimes four, would be a safer practice. A late one outdoors would, in the case of those having little room to spare under glass, answer the same purpose, and if sown in a small bed the plants can be protected and transplanted into better soil in March or April, according to the conditions of the soil and the weather.

Parsley germinates slowly in the open garden at any season, but sown in a box of fine soil and placed in a warm house there is no more trouble experienced than with any other vegetable. This slow growth of the seed germ prompts some to lay boards or slates over the drills to maintain a uniformity of moisture, which is so necessary a condition in the raising of any plant from seed. By such a course the crop may be advanced many days, and it may be weeks, when the ground continues in a dry state over a long period.

Parsley, like everything else, delights in good and well-manured land, and I have noticed, too, that a change of soil is as agreeable to these plants as to other crops. To stand the winter firm ground is advisable, and there is not the need for this to be freshly dug or manured, but a plot chosen that has produced an early summer crop. There is much more difficulty in obtaining a "plant" at midsummer than in the spring. Watering of the drills prior to sowing the seeds is an incentive to early growth, but if the soil remain dry and hot for only a few days this will be soon evaporated. A covering with slates, boards, or straw, will, if put on at once, reduce the necessity of watering considerably, and the ultimate results will be more satisfactory. Of disease and insect troubles I have not had much experience. By giving the change of site for each sowing and planting, early thinning, and an occasional light sprinkling of salt and soot, I have generally obtained what is required—an all the year round supply.—W. S., Wilts.

WALLED-IN GARDENS—A FALLACY.

PERHAPS it would interest some of your readers to hear of my experiences with a walled-in garden as a place of protection to plant life. I have two gardens here, one an old one, perhaps between 200 and 300 years old, bounded on all sides by high flint walls. That on the north side is quite 15 feet high; the south, east, and west walls are nowhere less than 10 feet high. The whole garden is not more than an acre.

On the south face of the north wall I have Peaches and Apricot trees; the latter ten days ago were in full blossom. On the south border I have Potatoes, some of which were up 6 inches or more. Six yards to the south of the north wall there is a bed of Roses, which were very forward ten days ago. Now when one is in this garden, surrounded as it

is by these high walls, one would think that if ever there were a sheltered spot this would be it. But, no! The north-east winds we had lately seem to have been turned into a whirlwind within the walls, and have made the Rose bushes look as if they had been burnt, and the Apricot trees have been treated likewise, while Currant bushes have been whirled round and round till their stems have bored big holes in the soil.

Now in the other garden we have, and which is open to the south and not very well protected by hedges and trees from the north and east, nothing has suffered, although Roses, Pear trees, and other plants are very forward on account of the mild winter and spring. I think this clearly shows that walled-in gardens are a fallacy, and not to be recommended.—W. E. NAPIER, *Wiveton Hall, Norfolk*.

CHINESE PRIMULAS.

THE popularity of the many varieties of Chinese Primulas is now so vast, that it matters little where one goes, specimens are practically sure to be found. The amateur with only a small greenhouse always includes in his heterogeneous collection a few Primulas, while the gardener in a large establishment would probably find their place difficult to fill if the stock failed from some unexpected cause. For the greenhouse, the conservatory, and for table decoration the single varieties are almost invaluable, small plants in 3-inch pots being particularly charming for the latter purpose. The semi-double and double varieties, which are comparatively numerous, are not only available for the purposes above named, but are exceedingly useful for supplying cut flowers. Is it any matter for surprise, then, that these plants are so universally popular? Not at all, but rather the reverse—indeed, the numbers that are grown at the present moment might advantageously be doubled.

Like all other flowers, however, they must be well grown if their highest merits are to be developed, for it is an undoubted fact that some Chinese Primulas with which one occasionally meets are scarcely worthy the name. Not that well grown means large plants. Nothing of the sort, for the medium-sized plant in about a 5-inch pot will look handsomer than an ungainly specimen in one 2 or 3 inches larger. Immense leaves have a coarse effect, and the very large flowers sometimes produced on luxuriant plants have not the delicacy and refinement of smaller ones on medium-sized plants. To a certain degree the size of the plant must be governed by the object that the grower has in view, but as a general rule it is probable that the smaller will be the more useful. Each plant must have foliage that is clean and healthy, and be surmounted by flowers of perfect form, substance, and clear in colour. Such as these are happily often seen in gardens and nurseries, and it is in examining a large collection that one appreciates to the full the value of Chinese Primulas as winter-flowering plants.

One of the best illustrations of the perfection to which Primulas can be grown in the neighbourhood of London was seen several weeks ago in the Perry Hill nurseries of Messrs. J. Carter & Co., the Holborn firm that has for so long been famed for its stocks of these as well as other plants. The visitor then could see some 7000 plants, all growing in 48-pots and almost the whole of them in full flower. It was a glorious sight, and was well worth the time occupied by the visit.

Amidst such a plethora of excellent varieties it appears an almost impossible task to select a few that stand above the others for quality, and were a dozen plants alone of each grown, it is probable that everyone would shrink from the task. At Perry Hill, however, each was represented by a mass comprising many scores of plants, and such being the case, the best stood out conspicuously above the others, either by reason of their greater floriferousness, the quality of the individual flowers, the elegance of the leafage, or the purity of colour of the blooms. It is becoming customary in making selections of this nature to place them in order of merit, but in this particular instance no such effort will be made, as they were jotted down as they were observed and points of merit were not allotted. If one were seen that was decidedly inferior to the others it was passed and no mention made thereof, but such as this were rare, in fact only one or two were observed.

Floriferous, and delicate in shade, is Imogen, of which the flowers are rose, but it is scarcely equal in some respects to Princess May, of which the colour is a rather softer shade of rose, the shape of the flowers being very fine. Dwarf in habit, and very free in producing its shapely white flowers, is Elaine, which is known by all and accepted as a general favourite. Bouquet has not yet had a chance to attain to such great popularity, but will be welcomed by many. The white or tinted flowers appear surrounded by the green calyx, and the effect is unique, and of course a perfect buttonhole bouquet is ready for wear. Quite different in all respects is Ruby, with its brilliantly-hued flowers of richest rose. Such names as Carter's Scarlet and Carter's Rose are sufficiently expressive to render explanation superfluous. The Fern-leaved Elaine is as charming as its Palm-leaved sister named above, while Rose Queen, which resembles Princess May in many respects, is certain of admiration. Holborn Queen, of a pure white colour, is very fine in every way, and should be very widely grown, and the same may be said of the Holborn Salmon, Magenta and Carmine, of which the name tells the colour.

Turning from the single to the semi-double varieties we find the same general excellence. Lilac Queen tells its own colour, but cannot convey an idea of its good quality any more than can Vivid, which is a peculiarly rich deep carmine flower of the best form and substance. Aurora, a soft rose, is one of the best of its colour in the whole of the immense collection, Carmine Empress being another that is distinctly above the average

merit. Prince of Wales, salmon rose, is singularly beautiful, as is Princess of Wales, which is white, with occasional spots and flakes of rose. Both these are extremely floriferous, and the flowers are of splendid shape, as are those of the semi-double blue. Snowflake is of great beauty, the colour being a very soft blush.

And so one might go on naming variety after variety, but no special good could accrue therefrom. Some of the best are adverted to, and that is all that is desirable; but a word of advice may be given to those who have not seen the Perry Hill collection this year, and that is, to endeavour to see it in 1899, as they are certain to be delighted and instructed by what they will see.—SCRUTATOR.

NOVA SCOTIA FRUIT GROWERS' ASSOCIATION.

THINKING that your readers would be interested in a report of the meeting of our Fruit Growers' Association, I enclose some notes on the subjects discussed. The Colonies each year take more interest in the mother country, not only as a market for our fruit, but in many other ways, and it seems to me that there should be, and no doubt is, a similar interest in England as to our methods, our prospects, our successes and failures.

The meetings of the Nova Scotia Fruit Growers' Association are always interesting and well attended, and the thirty-fourth annual gathering held in Wolfville, on January 26th, 27th, and 28th, was no exception to this rule. The papers and discussion covered every phase of the fruit growing industry; yet it was quite evident that, in common with, perhaps, every other meeting of horticulturists held on this continent during the past year, the one subject of absorbing interest to all present was the San José scale. President Bigelow voiced the sentiments of all present when he said, in his opening address:

THE SAN JOSÉ SCALE.

"The San José scale has invaded fruit trees in all parts of this continent, and is the most destructive and most difficult to destroy of any insect pest. It is not yet known to be in Nova Scotia, and you will be called upon to recommend strong legislation to prevent its appearance here. In Ontario, where it has been found to an alarming extent, that Government has passed an Act which is very expensive and difficult to enforce, and it is for you to consider whether it would not be cheaper and more effective for us to ask for legislation prohibiting the importation of all nursery stock into Nova Scotia for one year at least. The man who plants an imported nursery tree in Nova Scotia this year is his own worst enemy, and should be dreaded and despised by fruit growers generally." No definite measures were adopted by the Association; but a committee was appointed to investigate the matter more fully, and draft a Bill which should give our orchardists the best protection possible from this most dreaded insect.

APPLES.

While this province is largely interested in the growing of many different fruits, still the after industry stands far in advance of all others in importance. This fact was easily seen in the interest manifested in every subject connected with Apple raising. One entire session was devoted to the discussion of the shipping and marketing of Apples, and many interesting and important facts were presented. Mr. John E. Starr of Port William, U.S., who was lately appointed by the Dominion Government to investigate this subject, was present, and reported the results of his work. He is emphatic in his belief that the principal cause of the injury which Apples sustain in being shipped to Great Britain is lack of ventilation in the hold of the ship while crossing the ocean. This opinion has long been held by experienced Apple shippers here, but it has hitherto been impossible to secure a reform in the matter.

In support of his opinion, Mr. Starr stated that last October he examined a cargo of Nova Scotia Apples when it reached London. The barrels had been stowed so as to allow plenty of ventilation, and as a result the Apples were in prime condition. During November he examined several other cargoes of Apples from this province. The weather being cooler they should have arrived in as good, if not better, condition than the earlier consignment. But it so happened that there were more Apples being shipped at this time, and, in consequence of this increased demand for space, the later cargoes were closely packed. As a result much of the fruit was seriously damaged, and, though still marketable, brought a much lower price than it otherwise would. This difficulty is likely to be greatest in years of bountiful crops, the very time when it is of the utmost importance that the fruit should be placed upon the market in the best possible condition.

ROUGH HANDLING.

At present all the skill of the experienced stevedore is directed toward stowing in the ship every barrel she will hold. Years of practice have enabled him to reduce this to an art, and when the ship is loaded there is scarcely a square inch of unoccupied space in the hold. There is, therefore, practically no ventilation whatever. Mr. Starr recommends that there should be a system of air chambers throughout the ship's hold, so arranged as to connect with one another, and thus carry fresh air to all parts of the cargo. To adopt this plan would necessitate the use of some lumber, but this could be of the roughest kind, and might be disposed of in England for fully as much as it costs. Furthermore, dependance should not be placed entirely upon the full-mouthed ventilators now used for forcing fresh air into the hold. They are well enough when the ship is running against the wind, or even when there is a calf, but let the ship

be running with the wind and there is practically no ventilation whatever. For such an emergency an exhaust fan should be provided, which would draw the air from the hold.

Rough handling in unloading is also accountable for a very considerable part of the damage sustained by Apples. It often happens that while the cargo is being discharged no one is present to guard the interest of the consignees, and the Apples are at the mercy of the gang of men who are unloading the ship, and whose only thought seems to be to get the cargo out in the shortest time and with the least inconvenience to themselves. Frequently the barrels are dropped 3 or 4 feet, till the wonder is, not that the Apples are sometimes injured, but that there is any fruit in the barrels which is *not* injured. If this rough handling and the matter of ventilation could be remedied, there is no reason why the Apples should not be placed upon the English markets in as good condition as when they leave the orchard, or even better.

PACKING AND SELLING.

Honest packing is always important, but it becomes doubly so in years of bountiful crops. At such times, the price being low, the fruit is sent to many parts of England not ordinarily reached, and in this way new markets are developed. If the fruit is satisfactory, the probability is that these new customers will try again the following year, even at a considerable advance in price.

Another point which Mr. Starr urged strongly was that each orchardist should select some reliable firm to whom his fruit might be consigned, and then not change. When a man has established a reputation for good fruit and honest packing his customers will watch for his consignments and, if necessary, will pay several shillings above the market price in order to secure the fruit. All this is lost if the grower ships one year to one firm and the next to another firm. Mr. Starr summed up the requirements for the future as follows:—Good fruit, honest packing, quick travel, good ventilation, careful handling.

It was urged by several speakers that each variety should be shipped in its season, and not held back in the hope of better prices. If Gravensteins are put on the market when Kings and Ribstons are demanded the result is disastrous. And furthermore, if the fruit arrives in an over-ripe condition it must be sold immediately for what can be realised on it, while if it is in good condition the consignee may either sell, ship to other markets, or hold for a time for better prices.

CRANBERRIES.

The raising of Cranberries is each year becoming more important in the province. I have seen many acres of low land, especially in the Annapolis valley, which can be used for no other purpose, and which requires but a small outlay to fit them for Cranberry growing. In the single county of Kings, in 1897, 2500 barrels of Cranberries were produced. Mr. Henry Shaw of Waterville gave the following facts in regard to his 2-acre Cranberry bog. He picked during the past season 174 barrels of fruit, which sold for 1135 dols., netting him 720 dols. above all expenses. Three hundred and sixty dollars profit on an acre is not a bad showing for a single year. Other growers gave similar experience, and it is evident that while the industry is as yet in its infancy it gives abundant promise for the future.

IRRIGATION.

It might be supposed that Nova Scotia, with its moist climate, would have all the rainfall necessary to secure the best results in fruit growing, but the experience of Mr. Henry Shaw, who has just been mentioned, would seem to indicate very strongly that such is not the case. Two years ago he bought a windmill with a 12 foot wheel, and a pump capable of raising over 150 barrels of water per hour. The water was pumped to the highest part of an 8-acre tract of land, and distributed from there in ditches to most parts of the orchard. A few parts could not be reached in this way. The first season, 1896, Mr. Shaw had a full crop on all the trees, as did his neighbour, who did not irrigate. The following year, however, when his neighbour had very little fruit, the trees which had received plenty of water bore another full crop; a few trees which had received a small amount of water produced a half crop, while the trees in those parts of the orchard not reached by the water gave little or no fruit. The outlook for the next year shows similar differences. The trees on the dry land, after a year of rest, promise a fair crop of fruit, but those on the irrigated land, though they have now borne two full crops in succession, give promise of an equally good crop in 1898.

The following officers were elected by the Association for the coming year:—President, J. W. Bigelow, Wolfville; Vice-President, Peter Innes, Coldbrook; Secretary, S. C. Parker, Berwick; Treasurer, George Munro, Wolfville.—F. C. SEARS.

LONDON'S OPEN SPACES.

VI.—CLAPHAM COMMON AND GREENWICH PARK.

IN 1842 it was noted in Knight's "London" that so rapid was the growth of the great city that, doubtless, in a very few years Clapham would become as much a part of the metropolis as Mile End. We, who now regard the continuous line of houses from Blackfriars Bridge to Balham itself, far beyond that, can scarcely conceive it was ever otherwise. The steady march of progress, or the enterprising builder, has blotted out many once honoured spots, such as Walworth Common and Stockwell Green; but, happily, Clapham Common has been preserved to us. If somewhat shorn of its stately dimensions in 1842, it is now a fine open space of 220 acres, only partially railed in. It was at one time rather notorious for its pleasure fairs, held on Good Friday, Easter and Whit

Monday, and Derby days, but these were voted a nuisance and abolished in 1873. A year later the Enclosure Commissioners for England and Wales certified a scheme for placing the common under the Metropolitan Board of Works. A sum of £17,000 was expended in buying up certain rights, and a mandate issued forbidding from that time the cutting of turf, digging of gravel, and shooting of rubbish. An avenue of young trees was planted and three fine ponds made during the draining of the ground, but its rustic simplicity was thought sufficient without any ornamental gardening.

The exposed position of the common has made it the victim of many storms, and any trees of historical interest have long since been swept away. One ruined stump to the north-east of the common may, however, be associated with Thomas Babington Macaulay, who spent the greater portion of his childhood in a house but a few yards from it, near to the Plough Inn. Under its sweeping branches the studious boy would have indulged in many of his waking dreams of "Robinson Crusoe." The County Council, carrying on the work of the Board of Works, have added a roomy bandstand, which is a great source of attraction to youths of the district on Sunday evenings, and they have further greatly extended the opportunities for football and cricket. It was here some American enthusiasts made a few years back a determined attempt to popularise the game of baseball, despite the derisive remarks on the man in armour who acted as "wicket keeper." Clapham is supposed to have derived its name from Osgood Clapha, the Danish lord, at whose marriage feast Hardicanute died. The district, and undoubtedly the common, too, has associations, beside Macaulay, of Pepys, who often stayed there with his friend Gauden, and of Mr. William Wilberforce, M.P., the distinguished philanthropist and father of Bishop Wilberforce.

Ancient and honoured, Greenwich Park is still one of the most charming resorts in the district of London. Peter the Great was not wholly a barbarian when he wondered why Dutch William did not have his royal palace there, not knowing that it was long a royal residence. When Greenwich Park was first enclosed by Humphrey, Duke of Gloucester, in 1433, Greenwich was "a prosperous town in Kent, five miles from London." The duke erected a palace, which he called Placentia. This was enlarged by Henry VII. and completed by Henry VIII. Here Queen Mary and Queen Elizabeth were born, and here Edward VI., who just lived long enough to found the Bluecoat School, died. Mr. T. Miller, in his "Picturesque Sketches of London," thus writes of the park: "What scenes these aged Hawthorns have looked upon. They are the ancient foresters of the chase, and many of them have stood here through the wintry storms of past centuries, and were gnarled and knotted and stricken with age long before Evelyn planned and planted those noble rows of Chestnuts and Elms. Below, between the plain at the foot of the hill and the river, stood the old palace of Greenwich, in which Henry VIII. held his revels, and where Edward VI., the boy king, breathed his last. That ancient palace was, no doubt, rich with the spoils of many a plundered abbey and ruined monastery. . . . On this hill, again, Cardinal Wolsey may have meditated with all his blushing honours thick upon him. Katharine, the broken-hearted queen, may here have reined in her palfrey, or from this aged Hawthorn have torn off a sprig when fragrant and white with Mayblossom, as now, and have presented it with a smile to the royal savage who rode beside her. On yonder plain, where so many happy faces are now seen, in former days the tournament was held. There gaudy galleries were erected, over which youth and beauty leant as they waved their embroidered scarves. We can almost fancy we can see the crowned tiger smile as he closes the visor of his helmet, bowing his plume while he recognises some fair face which was soon to fall on the scaffold with its long tresses dabbled in blood."

The Royal palace fared very badly during the Civil war, and, becoming ruinous, was pulled down by Charles II., who began a magnificent edifice, and lived to see the first wing finished. The Merry Monarch also enlarged the park, bringing it up to 185 acres, walled it round, planted it afresh, and erected a Royal observatory on the top of the hill for the use of the celebrated Flamstead. The observatory occupies the site of the tower commonly called "Greenwich Castle," which was built by Duke Humphrey. It was constructed in haste, chiefly with the materials of the old tower and some waste bricks that lay available at Tilbury Fort and the Tower of London.

The avenues still remaining in Greenwich Park are composed chiefly of Elm and Spanish Chestnut, the latter being mostly confined to the upper part of the Park. But there is one avenue—perhaps the finest—which, widening out at the base to correspond with the width of the hospital, is there composed of Elms, but as it ascends the hill is made up wholly of Scotch Firs of an exceedingly picturesque and noble type. Walking under these trees Dr. Johnson, who then had lodgings in Church Street (it was 1737), composed a great part of his "Irene." "One Tree Hill" "inspired" George Cruickshank to the following rhyme in his "Comic Almanack":—

Then won't I have a precious lark
Down One Tree Hill in Greenwich Park!

The significance of this title is now somewhat destroyed by the fact that six trees grace its summit, planted when the original solitary tree decayed. When the Queen came to the throne the park was much resorted to for fairs on the Monday, Tuesday, and Wednesday of Easter and Whitsuntide weeks. The fairs have long been out of date. In later times the glorious park has been unpleasantly associated with an Anarchist attempt, for it was here on February 15th, 1894, that the ruffian, Martial Bourdin, was fatally wounded by the premature explosion of a bomb he had prepared for Greenwich Observatory.—("Lloyd's News.")

THE YOUNG GARDENERS' DOMAIN.

CAMELLIAS.

THESE charming and certainly very popular evergreen shrubs have an imposing effect when well grown in houses devoted entirely to their cultivation. The best method is by planting in specially prepared borders, although they may be grown very successfully in pots or boxes if properly treated.

Camellias delight in shade, and retain their flowers three times as long as if exposed to the sun. They may be produced in abundance for at least six months. Those which expand early in the season are always of the best quality, and usually last the longest. Fire heat is seldom necessary except to exclude frost, but when flower buds are forming a genial warmth is beneficial, and should be continued until growth is completed, when the house may be gradually reduced to its natural temperature. If the buds form in clusters they must be thinned out. Always pay strict attention to watering and ventilation. Although abundance of air is essential for the Camellia, cold draughts are dangerous, and must be avoided if possible. During their growing season an occasional application of weak clear liquid manure and soot water may be given with advantage. Camellias are subject to insect pests, which should be diligently sought and destroyed if good results are expected.—J. F. D., Yorks.

GRAFTING GROS COLMAN ON A LADY DOWNE'S VINE.

THE Vine Lady Downe's was twenty years of age, planted in an outside border. About the middle of December, 1895, the Vine was cut back to within about 2 feet from its base, to form a stock for grafting. The following February the vinery in which the stock was situated was started. By the middle of March the stock produced several shoots, the three stronger of which were selected for grafting, the remainder taken off. When the three young shoots were about 18 inches in length they were grafted with Gros Colman scions, the split-grafting method being adopted. One out of the three scions soon united and started into growth, which went on very rapidly, and by the end of the summer had formed a short jointed well ripened cane. As soon as the leaves had fallen the cane was pruned back to fifteen joints from the union of the scion with the stock. In the following spring the cane broke very strongly, the whole of the joints starting, and fourteen of them showed fruit, but six only were allowed to carry their fruit. As a result we had six bunches of good shape and excellent colour, weighing, on an average, 3 lbs. each. The crop did not exhaust the Vine in the least, as it looks very promising for a still better crop this season. I have also seen very good results by grafting Gros Colman on a Foster's Seedling stock, but rarely on a Black Hamburgh.—A JOURNEYMAN.

[A concise description of successful practice, but no doubt other journeymen would have been glad if the condition of the scions had been made as clear as the rest of the communication.]

FUCHSIAS.

IN response to the call of "An Old Boy," on page 226, touching the desirability of learning to use the pen as well as the spade, I, for one, venture to enter the "Domain." Not having contributed before, one feels a little uncertain as to whether one's efforts will be crowned with success or not; but after so stirring an appeal it behoves us to try and do our best.

Fuchsias are not unfrequently neglected in gardens, on the plea that "cottagers can grow them," and for that reason no effort is made to cultivate them. But that is an erroneous idea, and one that should not be entertained. The comparatively small amount of skill required in the cultivation tends to the detriment of the Fuchsia in a slight degree in the estimation of some; but it should not be despised, for it rivals many of its more favoured associates of the greenhouse in wealth and beauty of flower, and also in length of period of beauty, for with judicious care and forethought plants may be had in flower for three months out of the twelve.

It is easily propagated by cuttings, which process is no doubt familiar to "Domain" readers, and therefore it is unnecessary to enlarge upon it. Although not a common practice, Fuchsias can be grown from seeds every year. Sow in heat in January or February, and when large enough to handle prick the seedlings round the edges of 3-inch pots, moving as required until the final size is reached. Shade and moisture are essential to their well-doing.

After they have ceased flowering they should be gradually dried, and stored under the late vinery staging or some other dry place for the winter. In the spring the plants ought to be repotted and grown again. They should have a frame to themselves, and be kept moist and well syringed on bright days. A light top-dressing of rich compost or some approved artificial manure is beneficial just before they commence flowering, and they should also have occasional applications of liquid manure, for the Fuchsia is a gross feeder, and must have abundance of food. They can be grown year after year, and by raising young plants, and throwing the old ones away, a continual supply of useful stock will be the result. Green fly is the worst enemy to Fuchsias, and as soon as it makes its appearance the plants should be promptly fumigated.—A. E.

[Men who do not "try" cannot expect to succeed; those who will to excel in anything can only do so by intelligent practice and perseverance.]



FRUIT FORCING.

Cucumbers.—Instead of striving to renovate plants that have been in bearing all the winter, it has become a practice to uproot them, which answers admirably for market purposes. But home growers are obliged to make shift with the old plants until a supply can be had from frames or pits, so the winter fruiters have to be renovated at the roots, and that without prejudicing the successional supply of fruit. Stopping, training, and cutting out the old growths must be followed up, and copious waterings given as necessary. Assist plants in full bearing with abundant supplies of weak liquid manure, and earth the roots occasionally. Damp the floor about 8 A.M. and 3 P.M., the foliage being syringed lightly on fine afternoons, and keep the evaporation troughs charged with guano water or liquid manure. Shading will be most needed after a period of dull weather to prevent flagging.

Melons.—In the earliest house the plants are swelling their fruits and require supports. Remove all surplus fruits and all flowers, also superfluous growths, stopping and tying as necessary. Afford efficient supplies of water, giving liquid manure as necessary for the maintenance of a free growth. Genial atmospheric moisture must be maintained by damping early in the morning and afternoon, syringing the plants lightly about 3 P.M. on bright afternoons. Later plants showing fruit should, unless abundant and the plants vigorous, have the first blossoms removed. Secure a somewhat higher temperature and drier atmosphere during the setting, only affording as much moisture as will prevent flagging. Stop the shoots at one joint beyond the fruit, but employ the knife as little as possible during the setting period.

In pits and frames ample bottom heat must be maintained, observing the conditions previously given during setting. When the fruits are set and swelling they should be placed on a piece of slate. If canker appear at the collar rub quicklime into the affected part until quite dry, repeating this as necessary.

Peaches and Nectarines.—*Earliest House.*—Where such varieties as Alexander, Waterloo, and Early Louise Peaches, with Advance and Cardinal Nectarines are grown, the stoning process will be over, and to accelerate the ripening they may be given a night temperature of 65°, but falling to 60° on cold nights. Admit a little air constantly. Close the house at 80°, sufficiently early to allow of an advance to 85° or 90°, the trees being well syringed and good atmospheric moisture secured. Remove the leaves over or in front of the fruit, and turn this with its apex to the light by thin laths placed across the trellis. Syringing should cease when the fruit commences ripening, but a genial condition of the atmosphere must be maintained for the benefit of the foliage by damping the paths and borders twice a day and keeping the soil properly moist.

Second House.—The trees in the structure started in January, and brought forward gently, have the fruit in a forward state, the disbudding completed, and the shoots that are to follow those now fruiting laid in. Always allow plenty of room in the ties, and do not keep them closely tied down for some time longer. Allow no more growths to remain than are necessary for next year's fruiting, or for the extension of the trees. Stop gross shoots or remove them, as it is highly important the sap be equally distributed, and an equality of vigour maintained through the branches of each tree. Pinch laterals at the first joint, and shoots retained to attract the sap to the fruit should only be allowed moderate extension. Endeavour to provide an equal distribution of foliage that will shade and protect the strong wood from the direct rays of the sun as the season advances. Ventilate freely, but carefully, so as to avoid cold currents of air and sudden depressions of temperature. Water the inside borders copiously, and keep them mulched with sweet rather lumpy manure.

Trees Started in February.—Examine them frequently for disbudding, and this is best done gradually, the strongest parts of the trees being commenced with. As the fruit is swelling freely, remove those worst situated, and leave only a few more than will be required for the crop, one to every square foot of trellis covered by the trees being ample for the large-fruited varieties, and one to every 9 inches square for the medium-sized and Nectarines. Syringe early on fine mornings, give a little air [shortly afterwards, gradually increase it, and close about 3 P.M.; but if the weather be very bright later closing must be practised.

Trees Started in March.—The trees are out of bloom, set the fruit well, and aphides made appearance. Fumigation or vaporisation must be practised carefully, and on two or three consecutive evenings. Syringe moderately in the morning, and on fine afternoons, always early enough to allow of the foliage becoming dry before night. Disbud gradually, and rub off all small and badly placed fruit as soon as the most prominent shows signs of taking the lead. Ventilate freely on all favourable occasions, and close early with a view to husbanding the sun's heat, but avoid a close vitiated atmosphere, admitting a little air constantly to prevent it.

Late Houses.—The trees are in full blossom. Ventilate freely and keep safe from frost. To insure a good set it is advisable to turn on the heat in the morning, so as to raise the temperature to 50°, and keep it at that, with a gentle circulation of air, turning off the heat early in the afternoon, so as to allow of the pipes cooling before night, and the

temperature falling to its night minimum of 40° to 45°, which is quite safe, and ought to be secured after the blossoms expand, with a little air to prevent the deposition of moisture through the night on the flowers. Artificial fertilisation should be resorted to as necessary.

THE KITCHEN GARDEN.

Asparagus.—Fresh beds may be formed during this month, fewer failures occurring when the plants are moved after top growth has commenced than when they are transplanted earlier. In any case the delicate root fibres ought to be exposed as little as possible to cold drying winds, and any plants that have been sent from a distance and become very dry should directly they arrive be spread thinly on the surface of the ground, and sprayed with water prior to covering, first with fine sandy soil and then with mats. If kept moist the roots will plump up, root fibres form, and the plants be in a fit state to put out in a week or ten days. In any case more than ordinary pains ought to be taken in planting Asparagus, burying the plants roughly meaning probably the loss of a season. Cold clayey soils require the most preparation, and light sandy ground the least. Correct the retentiveness of the former by a free admixture of sand, fine mortar or lime rubbish, charred soil and ashes, leaf mould and fine peat, well mixing this with the top spit rather than burying it deeply. Raised beds are most desirable in low damp places, and are largely formed in other positions. These beds may be 4 feet wide, with alleys 18 inches wide between, and will hold three rows, the two outer ones being arranged about 9 inches from the edges. Lighter soils may be deeply dug or trenched as for ordinary garden crops, mixing solid manure freely with the bottom spit, and some fine well-decayed manure with the top soil. Raised beds can be dispensed with in the case of warm non-retentive soil, arranging the rows 2 feet to 3 feet apart on the level. Extra space must be allowed if large Asparagus is desired, but a greater bulk of good produce can be cut from a given space of ground when the plants are disposed 15 inches to 18 inches apart in the rows. In planting take care to spread out the roots in a natural manner, covering them and the crowns with about 3 inches of the finest soil. Slugs are destructive to young Asparagus growths, and should be warded off with the aid of soot and lime.

Sowing Asparagus.—Seeds should be sown at once, or directly the ground can be got into a suitable condition, either where a portion of the plants are to remain, or in a well-prepared site, from which the plants may be moved after one or two seasons' growth. In the former case prepare the sites much as advised in the case of beds to be planted, sowing two or three seeds where plants are required. In the other instance sow the seeds thinly in drills 1 foot apart. Seeds may also be sown thinly over the surface of beds not so fully occupied by plants as desirable, the seedlings duly thinned out and allowed to grow without being cut from for two years, putting new life into the beds.

Broccoli and Borecole.—Only the autumn varieties of Broccoli should be raised, and planted early. Late in April or early in May is quite soon enough to sow seeds of midseason and late varieties, leggy, overgrown plants being the first to feel the ill effects of frost. Sprouting Broccoli is an exception to the rule, this requiring a longer period of growth, and should be put out early. Borecole sown now, or a fortnight later, will be ready for planting quite as soon as the ground in most gardens can be spared for the crop. The value of Asparagus or Buda Kale should not be overlooked, this rarely succumbing to frost, and the sturdy plants yield abundance of succulent tops long after the other winter greens have run to seed.

Cauliflower.—March and the early part of April proved most unfavourable for planting Cauliflowers wintered under glass or otherwise protected, and those who risked them in the open will have many failures, and more plants must be put out. They move best out of pots, and time will be gained by first establishing recently raised plants in 3-inch pots under glass before trusting them in the open. Autumn Giant sown in the open now, and planted out when large enough on well prepared ground, would heart in during October and November, a portion of the stock being available for lifting and storing in pits in the autumn.

Savoy Cabbage.—Tom Thumb, and other dwarf early-hearting varieties, may be sown now, as these are frequently of good service in the autumn, but the midseason and late varieties may well be sown at the same time as late Broccoli. If raised and planted early they are liable to become very coarse, hearting-in earlier than desirable, and not withstanding frost.

Carrot.—Very large roots are of little or no value for cooking purposes, the preference being given to those medium and small in size. Early sowing is conducive to coarseness of roots. The middle of April is soon enough in most localities to sow seed of recognised main crop Carrots, and with these may also be sown the larger Horn or stump-rooted varieties. Carrots should have a well prepared site—that is to say, the ground must be brought into a finely divided state to a good depth. If the ground were well manured for the preceding crop no manure ought to be needed for Carrots, and the least that can be done if fresh manure is used is to dig this in deeply, contact with manure causing the roots to fork. The drills for strong-topped varieties should be 12 inches apart, 2 inches less sufficing for the Horn varieties. If the Carrot maggot has proved troublesome in previous years, dust fresh wood ashes lightly (an excess may do harm) along the drills before covering the seed.

Salsafy, Scorzonera, and Chicory.—Early sowing is not desirable in either case. If the seeds are sown now the roots will become quite large enough, and comparatively few plants will run prematurely to seed. For these, again, no solid manure ought to be needed, and none should come into contact with the tap roots anywhere near the surface. Draw shallow drills 15 inches apart, and sow the seed thinly in these. Chicory

seed is comparatively small and germinates readily; thick sowing, often resorted to, entails much labour in thinning that might have been avoided.

Vegetable Marrows.—It is too early to sow seeds with a view to having plants for turning out in the open late in May or early in June, but early Marrows are most appreciated, and if a frame or hand-lights can be spared to cover the plants for a time, some should be raised at once. Sow the seeds singly in 3-inch pots, and place them in gentle heat to germinate, raising the plants well up to the light before they become drawn. In the meantime collect a large square heap of leaves, sweepings, vegetable refuse, and strawy manure, or enough to form a bed for both early and main crop plants.

THE BEE-KEEPER.

REMOVING SPARE COMBS.

SOME of the most successful bee-keepers in this country leave the whole of the frames in the hive throughout the winter; others equally fortunate in the condition of their stocks in the spring remove the outside frames from their hives in the autumn and close up the division board, so that the bees may be enclosed in a smaller compass and thus be able to withstand any extremes in temperature. If extra-sized hives are used the latter plan is recommended, but if the ordinary hive holding ten standard frames is in use then it is not necessary. It is many years since we first experimented on these lines, and during the past winter we had several hives holding upwards of a dozen frames, the whole of which were left in the body of the hive. Others, again, had the division board placed between the empty combs and those containing the stores, whilst those having a less number of frames were not disturbed.

It was therefore interesting to observe how the various colonies had come through the late exceptionally mild winter. Strange as it may appear there was no difference in them, all were in good condition. The mild weather had doubtless something to do with this, although it is only fair to say that in previous winters when the temperature has been low there has not been as much difference as one would have expected.

It is an advantage after this date, whether the hives are large or small, to close up the frames containing bees, brood, and stores with the dummy or division board. The outer frames will now be empty, and these need not be taken away, but placed at the back of the division board; they will then be conveniently to hand for use in the brood nest when required. It is important that the whole is covered up warm with several thicknesses of old carpet or similar material, and if a board is placed on the top of all and weighted down with a brick, it will be an advantage in conserving the heat. The middle of a fine day should be chosen for examining stocks, and if carefully done the bees need not be disturbed.

UNITING WEAK COLONIES.

It is quite a common occurrence where several colonies of bees are kept in an apiary, for some of them to be much stronger than others. This is more apparent at this season than at any other time of the year. Why it should be the case it is somewhat difficult to say. The queens may all have been carefully bred early in the season, and fertilised in due course. These stocks have gone into winter quarters crowded with bees and well supplied with stores, but when examined in early spring some of the colonies will be extra strong in bees, whereas with others the opposite will be the case. This is the experience of all bee-keepers with whom we have come in contact. There are others who have no system of queen rearing, and leave the matter very much to the bees themselves; the consequence is many old queens die during winter and early spring, and the natural consequence is numerous weak colonies in the apiary.

But what is best to be done with these weak stocks? We have no hesitation in recommending them to be united, having on many occasions derived great benefit by doing this early in the spring, instead of waiting until the season has well advanced. If the stocks are queenless, then unite them to the next colony having a fertile queen. But if two or more stocks are headed by queens, and the bees have dwindled until few remain, destroy the older queen, and unite the bees to the one having the more prolific queen.

If the stocks are several yards apart, and the weather is bright, so that the bees are on the wing, remove them a few feet nearer each other daily. In the evening remove all the empty frames from the hive containing the queen. Separate the other combs, and sprinkle the bees with flour or thin warm syrup. This may be repeated with the queenless colony, the frames being lifted out and placed alternately with those in the other hive. Cover up warm, and place a bottle of warm syrup on the top, and all will be well. Stocks treated in this

manner invariably do well, if not left too late until there are not sufficient bees to keep up the temperature of the hive. When this is the case more bees must be added, or it will end in failure.

ROBBING.

What bee-keeper is there who has kept numerous colonies of bees and has not had a bad case of robbing? We have experienced it on several occasions, but more often in our novitiate days than now. Bee-keepers have often themselves to blame through carelessness in some form or other. It may be in spilling some syrup, or allowing a weak colony to remain on its stand after the bees were too few to protect their stores. Once let the robbers, which come from the strong colonies, gain an entrance, they will in a short space of time clear out the stores, and the rightful owners will (if not attended to) soon die of starvation. At first they will try and defend their stores, but when they find the case is hopeless they will not interfere with the robbers. It is surprising at what a rapid rate they will clear out the stores from a weak colony.

It is a decided advantage to reduce the entrance to an inch at this season, allowing more space as it is required; this will give the bees a better opportunity of defending their stores than if the entrance were open its full width. In a bad case of robbing it is often necessary to remove the stock attacked several yards away from its original stand, placing an empty hive in its place. Before doing this some carbolic acid should be smeared on the alighting board, only allowing about an inch of clear space opposite the reduced entrance. This will often have the desired effect without the necessity of moving the stock bodily away. When this is done care must be taken that the colony attacked is well supplied with stores, which should be given in the evening.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

H. Cannell & Sons, Swanley and Eynsford.—*Floral Guide*.

J. Cheal & Sons, Crawley.—*Dahlias*.

W. Paul & Son, Waltham Cross.—*New Roses*.



TO CORRESPONDENTS

* All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Justicia calytricha (Nemo).—In the cultivation of this charming plant it is advisable to raise fresh stock from cuttings annually, for old plants seldom grow with such vigour or produce such large plumes of flowers as do young plants. Old plants from their slow stunted growth often become a prey to scale, which is not the case where the plants are raised from cuttings every year, provided they are not grown too warm. Old plants that have flowered should be encouraged to grow in a warm house, for the sooner cuttings can be obtained the better. When strong cuttings have been produced they should be inserted singly in small pots, and if kept close in the propagating frame every one will root. They should be grown warm until they are established in 8-inch pots, and from this stage an intermediate temperature should be given them. After the middle of July they should be grown in cold frames.

Leucophyton Browni (*H. H.*).—In the propagation of this serviceable carpeting plant it is essential to bear in mind that it is most impatient of fire heat, and the cuttings are certain to fail if subjected to it. The proper time to insert the cuttings is during the month of September, and they ought to be treated exactly the same as *Violas* or *Calceolarias*. Either three parts fill frames set on a hard dry base, with nearly exhausted heating material, or set hand-lights on a bed of the same. Cover with about 3 inches of fine sandy soil, face over with sharp sand, and dibble out the cuttings thickly, keeping them rather close and shaded from bright sunshine till rooted, and in all other respects treat similarly to *Calceolarias*. They would receive the least check when bedded out if first established in thumb pots, but keep them out of the houses.

Anemones from Seed (*New Reader*).—Certainly, single *Anemones* can be readily raised for seed, and plants from seeds sown now will commence flowering next year if grown in fertile soil. The year following they will be very fine if the tubers are not disturbed. The seed being very woolly must be separated by rubbing it with sand, and then scattered in drills about 6 inches apart and 1 inch deep, saturating them before sowing if the soil be dry. Should bright weather follow it will be advisable to shade the beds with mats or some other material, or the seed will not germinate freely, and shading is much better than watering after sowing. If the seedlings are crowded patches of them may be dug up with earth adhering to the roots, and transplanted in showery weather in summer. Fresh seed should be obtained, as the old does not germinate freely.

The Caper Plant (*J. W. W.*).—We imagine you must be a comparatively new reader, as we have more than once stated that *Capparis spinosa*, from which the capers of commerce are obtained, grows abundantly in the south of Europe, along the shores and on the islands of the Mediterranean, and in Syria. It is generally found wild on walls and rocks; it is met with on the walls of Rome, Sienna, and Florence, and is extensively cultivated in the south of Europe, particularly between Marseilles and Toulon, and in many parts of Italy; but it is from Sicily that the greatest supply is brought. The flower buds form the capers so much used as a pickle and a sauce, but in some parts the fruit is also employed. In the early part of summer the plant begins to flower, and the flowers continue to appear successively till the beginning of winter. The young flower buds are picked every morning, and as they are gathered they are put into vinegar and salt; and this operation continues for six months, as long as the plants are in a flowering state. When the season closes the buds are sorted according to their size and colour, the smallest and greenest being the best; these are again put into vinegar, and then packed up for sale and exportation. Capers are stimulant, antiscorbutic, and are much employed as a condiment, but the medicinal virtues of the plant reside in the root, which is slightly bitter, somewhat acrid and sour, and is diuretic.

Convolvulus cneorum (*H. S. W.*).—This is commonly known as the Silvery Bindweed, and is a dwarf shrub from Greece with lanceolate leaves. It grows about 18 inches high, and is of semi-procumbent habit, which renders it very effective on the dry sunny aspect of rockwork, where it is hardy in all but the severest winters. The plant is evergreen, and bears a number of shining white flowers, which have the glitter of pearl, and, like it, are slightly tinged with red. Of free growth it soon forms a spreading low bush. Cuttings rooted in late summer, wintered in a cold frame, and planted out in the spring, form a bush nearly a yard across by September, during which it commences flowering and continues until frost. In order to guard against mishap from frost it is well to root cuttings in August under a hand-light, pot them when rooted, and winter in a cold frame or house. Plants raised in this way, grown in a cool house, and shifted into larger pots as required, are very showy for conservatory decoration. The flowers are borne like those of *C. mauritanicus* at the points of the growth, hence stopping must not be continued longer than is needed to lay the foundation of a compact plant. Although not nearly so trailing in habit as *C. mauritanicus* it makes a desirable basket plant, but is best seen as a rock plant. It does well in loam with a little leaf soil or decayed manure, and a little sand to keep it open.

Layering Chrysanthemums (*R. Thompson*).—This operation is comparatively easy, and with ordinary attention you need have no fear of failure occurring. Plant a few old plants out of doors in a row; let them grow as wild as they choose till the month of July; then take as many pots as plants are required, and plunge them, filled with some rich soil, into the ground at such a distance from the plants growing in the ground as will allow the tops only, when bent down, to reach the pots; bring them carefully down, and peg each branch firmly into the soil. Leave about 2 inches of the top out of the soil. If the shoot is branched it is well, but if not it must not be topped, because there is some danger that the layer may continue to grow and not flower if topped so late in the season. The aim of this mode of propagation is to make them flower when very dwarf, and therefore the layer should have buds upon it just visible at the time when layering is performed. Keep the soil in the pots moderately moist till roots are formed, and after that water more freely. When it is certain the layers have made plenty of roots, cut them off from the parent plant, and remove them into a frame or pit deep enough to receive them. Should they flag during the day, give a sprinkling of water, and shade for a day or two till they recover; then give air and water freely. They will then be good plants, about a foot high, with, perhaps, six or ten flowers on each.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a

flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*S. H. P.*).—1, *Doronicum Clusi*; 2, *Pittosporum Tobira*; 3, *Cydonia Maulei*. (*W. J.*).—1, *Primula farinosa*; 2, *Omphalodes verna*; 3, *Primula japonica*; 4, *Kerria japonica flore-pleno*. (*C. M.*).—1, *Odontoglossum pulehellum*; 2, *Cypripedium villosum*. (*P. P. R.*).—1, *Celsia arcturus*; 2, *Sedum lydium*; 3, *Herniaria glabra*; 4, *Spiraea prunifolia*; 5, *Ribes aureum*; 6, *Forsythia intermedia*. (*R. L.*).—1, *Euonymus latifolius variegatus*; 2, *E. japonicus aureo-variegatus*; 3, *Erythronium grandiflorum*; 4, *Primula capitata*; 5, *Pulmonaria officinalis*; 6, *Muscari conicum*, poor form. (*W. M.*).—1, *Tropæolum tricolorum*; 2, not yet identified; 3, *Diplopappus chrysophyllus*.

COVENT GARDEN MARKET.—APRIL 13TH.

FRUIT.

		s. d.	s. d.			s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	...	1	6 to 4	0	Grapes, lb....	...	2 0 to 3 0
Cobs ...	...	21	0	22 6	Lemons, case	...	11 0 14 0
Filberts, 100 lbs.	...	0	0	0 0	St. Michael's Pines, each	2 6	5 0

VEGETABLES.

		s. d.	s. d.			s. d.	s. d.
Asparagus, per 100 ...	...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4	
Beans, $\frac{1}{2}$ sieve ...	...	0 0	0 0	Onions, bushel ...	3 6	4 0	
Beet, Red, doz. ...	...	1 0	0 0	Parsley, doz. bnchs...	2 0	3 0	
Carrots, bunch ...	...	0 3	0 4	Parsnips, doz. ...	1 0	0 0	
Cauliflowers, doz. ...	...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0	
Celery, bundle ...	...	1 0	0 0	Salsafy, bundle...	1 0	0 0	
Coleworts, doz. bnchs.	...	2 0	4 0	Scorzonera, bundle ...	1 6	0 0	
Cucumbers...	...	0 4	0 8	Seakale, basket...	1 6	1 0	
Endive, doz. ...	...	1 3	1 6	Shallots, lb. ...	0 3	0 0	
Herbs, bunch ...	...	0 3	0 0	Spinach, pad ...	0 0	0 0	
Leeks, bunch ...	...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9	
Lettuce, doz. ...	...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9	
Mushrooms, l. ...	...	0 6	0 8	Turnips, bunch...	0 3	0 4	

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36	0	Ferns, small, 100 ...	4 0 to 8 0
Aspidistra, doz. ...	18	0	36 0	Ficus elastica, each...	1 0 7 0
Aspidistra, specimen ...	5	0	10 6	Foliage plants, var., each	1 0 5 0
Azalea, per doz. ...	24	0	36 0	Genista, per doz. ...	8 0 12 0
Calceolaria, per doz. ...	8	0	12 0	Hyacinths, doz. pots ...	8 0 12 0
Cineraria, per doz. ...	6	0	9 0	Lilium Harris, doz....	12 0 18 0
Cyclamen, per doz ...	9	0	18 0	Lycopodiums, doz. ...	4 0 6 0
Dracæna, var., doz. ...	12	0	30 0	Marguerite Daisy, doz. ...	6 0 9 0
Dracæna viridis, doz. ...	9	0	18 0	Mignonette, doz. ...	6 0 12 0
Erica hyemalis, per doz ...	9	0	15 0	Myrtles, doz. ...	6 0 9 0
„ various, per doz. ...	8	0	12 0	Palms, in var., each...	1 0 15 0
Euonymus, var., doz. ...	6	0	18 0	„ specimens ...	21 0 63 0
Evergreens, var., doz. ...	4	0	18 0	Pelargoniums, scarlet, doz.	4 0 6 0
Ferns, var., doz. ...	4	0	18 0	Tulips, various, doz. bulbs	0 9 1 6

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2 0	to 4 0	Marguerites, doz. bunches	3 0	to 4 0
Arum Lilies, 12 blooms ...	3 0	4 0	Mignonette, doz. bnchs. ...	2 0	4 0
Asparagus, Fern, bunch...	2 0	4 0	Myosotis, dozen bunches...	3 0	6 0
Azalea, dozen sprays ...	0 6	1 0	Narciss, dozen bunches ...	2 0	4 0
Bouvardias, bunch ...	0 6	0 9	Orchids, var., doz. blooms	1 6	12 0
Carnations, 12 blooms ...	1 0	3 0	Pelargoniums, doz. bnchs.	6 0	9 0
Daffodils, doz. bunches ...	2 0	6 0	Roses (indoor), doz....	1 0	2 0
Eucharis, doz. ...	4 0	6 0	„ Red, per doz. ...	3 0	5 0
Euphorbia jacquiniæflora,			„ Tea, white, dozen ...	1 0	2 0
per bunch ...	1 0	2 0	„ Yellow, doz. (Perles)	1 6	4 0
Gardenias, doz....	2 0	4 0	„ Safrano (English) doz.	1 0	2 0
Geranium, scarlet, dozen			„ Pink, dozen ...	3 0	8 0
bunches ...	6 0	8 0	Smilax, bunch ...	2 0	3 0
Lilac (French), bunch ...	3 6	4 0	Tulips, dozen blooms ...	0 6	1 0
Lilium longiflorum, 12 blms	4 0	6 0	Violets, dozen bunches ...	0 6	1 0
Lily of the Valley, 12 sprays	0 9	1 3	„ Parme (French),		
Maidenhair Fern, dozen			bunch ...	2 6	3 6
bunches ...	6 0	8 0	Wallflowers, doz. bnchs....	3 0	4 0



SOMETHING WRONG.

We most of us know by sad experience the horror of the short sea passage in well appointed boats, either over the English Channel or the stormy waters that separate us from the Sister Isle. To some of

us the journey, short as it is, is fraught with terror. The seas that rise mountains high threaten to engulf us—that is if we are well enough to be conscious of anything save our own prostration, and we never take the voyage voluntarily. Everything is done to secure our comfort. The steamers are built on the best possible principles, the captains are picked men, yet nevertheless we suffer for a time unmitigated woes.

We have been much saddened by the perusal of an article in "Chambers' Journal" for February, which has just come under our notice. The subject is "Revelations of the South American Cattle Trade," and if only half of the facts stated therein are correct, the picture is a most dismal one. We know magazine articles are often written for effect, and the matter passed out of our minds till it was recalled by a note in "Agricultural Gazette" for March 28th. It appears from that paper that the facts in question have been brought before the House of Commons by Col. Cotton-Jodrell. He asks Mr. Long whether he is aware of the awful mortality of stock on board ship between S. America and our ports. Mr. Long is forced to admit that the figures quoted are correct, and he holds out hopes that the evils complained of may be mitigated.

In the meantime we hardly suppose the average Englishman has the slightest idea of the terrible state of affairs at present existing. Col. Cotton-Jodrell's figures run somewhat thus: Of cattle imported from South America. Of cattle arriving at the home ports during 1897 the losses en route were 10 per cent., and of sheep the losses were a little over $3\frac{1}{2}$ per cent. The voyage occupies about thirty days.

We import much stock from the States and Canada, and the losses during that voyage amount to only 2·3 per 1000 for cattle, and 7 per 1000 for sheep. Of course we know the voyage is much shorter, but not so much shorter as to make such a sensible difference in the figures. The N. Atlantic steamers engaged in the cattle traffic are bound to be fitted up in the best possible manner, and are subjected to close inspection. On them, at least, all is done that can be done to mitigate the hardships of the passage. Now, the S. American traffic has not yet been so regulated. The great evils are unsuitable ships, bad fittings of the match-box type, and no appreciable ventilation.

Of course there are some steamers engaged in the River Plate that are specially fitted, but alas! they are outnumbered by boats designated as "tramps." The name tells its own tale—they are simply unsuitable in every detail, and become veritable shambles. No doubt officials of the Argentine would tell of proper codes of regulation, re-loading, and so forth; but they might hesitate to tell that a little golden eye salve makes them conveniently blind. These South Americans have a low standard of commercial morality.

Cattle below deck, sheep on deck, so closely packed as to make navigation almost impossible. Then picture a voyage through the tropics, the stifling heat, the bitter cold of the Northern seas—it is a wonder any cattle survive. Then throw in rough weather, the ship rolls and pitches, the divisions give way, horns and legs and bodies shaken up in inextricable confusion; think of the broken bones, the horrid wounds, and the general suffering. The sheep have the best of it. A storm and wave-swept decks soon end their sufferings, but the cattle below are in an inferno.

It is not only in bad weather these sufferings are so terrible. Many die from suffocation, and what must they have gone through before merciful death released them? One does not fancy handling dead stock at the best of times, but to get a dead beast out of the bowels of the ship is too fearful to think of, and yet it has to be done, and done quickly, or the health of the crew will be in jeopardy. We wonder in what sort of condition the survivors land, or where are they hidden till they have got a bit of bloom on again? The beef and mutton is dearly bought at the price of so much cruel suffering, and someone is guilty of what amounts in our eyes to a crime.

Men of such callous heart can only be touched by the strong hand of law, and the question seems to be who is to mete out the punishment, and where? We are the policemen of the world. We

have stopped many other atrocities, and this is one that seems to call for stringent legislation.

We want the co-operation of the various S. American Governments, which one would think it might be easy to obtain. At any rate we can insist on English vessels complying with the sanitary regulations observed by the boats engaged in the N. American trade. We note that all the sheep this week at Deptford market were from the Argentine Republic, and they were 5d. per lb., as against English in other markets at 8 $\frac{3}{4}$ d. There were 3379 of these poor exiles on sale.

To come home—we are not altogether without blame. Have we never seen at the eastern ports shipments of poor worn-out horses for the Continent? There is more of that going on than we suspect, but the P.C.A. Society has its eye on that branch of industry, and probably we shall hear more of the matter anon. It needs investigation, and any organisation that will mitigate the sufferings of man's most useful servant ought to receive unlimited support from the public.

WORK ON THE HOME FARM.

The rain of last week, though not heavy, was sufficient to improve the tilth of Turnip land still unsown with Barley, and the spring sowing is being now finished very favourably.

We have had one or two rather sharp frosts, and early sown Oats seem to be feeling the effects of it. A little more rain is what we still want. The land is very dry, and there will not be too much moisture to start the growth of the Mangolds, which will have to be sown this month. The earlier they are put in the better after April 1st, if the land be good and well drained.

We have the land for Mangolds very clean, so we shall not risk loss of moisture by moving it uselessly now. We shall plough at once, roll it quickly, then ridge it up, manure it, and drill the seed, getting all the operations performed as rapidly as possible. We shall steep the seed in water a couple of days before drilling, as the moisture makes germination much more certain. Four cwt. of common salt per acre is a good thing for Mangold on light land.

We are harrowing Wheat now whenever it is dry enough, and are giving about 90 lbs. per acre of nitrate of soda. Wheat will pay for a little help when it is worth 40s. per quarter.

Pastures have suffered from the frosts; there is not too great a supply of roots left, and many farmers are having their stock forced on a glutted market sorely against their will; here again we want rain. Clovers have died off a good deal this winter; this cannot have been caused by frost, and must be from Clover sickness. Cross cropping and Potato growing are good antidotes for Clover sickness, but lime is the best of all. We like to use it for the Turnip crop, and generally apply 3 tons per acre. It has a marked effect where the Turnip finger-and-toe or Clover sickness is prevalent, but especially marked is its influence on the Clover.

Hens are laying well, but eggs are cheap at eighteen for 1s. The early chickens grow fast, and are nearly ready for the cook.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1898. April.	Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.			
		Dry.	Wet.			Max.	Min.	In Sun	On Grass		
		inchs	deg.	deg.		deg.	deg.	deg.	deg.	inchs.	
Sunday	3	29·855	49·9	43·8	N. W.	42·0	57·3	41·4	105·2	38·8	
Monday	4	29·841	49·1	45·1	W.	42·9	54·4	43·9	102·6	36·7	
Tuesday	5	30·209	41·7	37·9	N.	42·1	48·1	30·7	69·1	24·1	
Wednesday ..	6	30·158	46·8	42·4	S. W.	40·9	60·3	28·9	99·8	23·5	
Thursday ..	7	30·207	51·8	49·9	S. W.	43·1	60·3	45·8	84·3	39·6	
Friday	8	30·262	55·7	48·8	S. E.	44·4	66·5	39·3	109·0	34·0	
Saturday	9	29·868	52·2	49·1	W.	46·0	60·9	48·6	108·8	40·2	
		30·057	49·6	45·3		43·1	58·3	39·8	97·0	33·8	
										0·269	

REMARKS.

3rd.—Fine and mild, with cloud and sunshine; clear night.
4th.—Fine and generally sunny, but a slight shower of rain and hail at 10 A.M.
5th.—Brilliant early, but haze and thin cloud from 9 A.M.
6th.—Brilliant morning; a little cloud in afternoon; bright night.
7th.—Overcast morning; frequently sunny in afternoon. Lunar halo at night.
8th.—Warm, with bright sunshine throughout.
9th.—Occasional showers in morning, and thunder, lightning, and heavy rain at noon; variable and windy after.

On the whole fine, but rather stormy at the end. Temperature above the average, and 7° above that of the preceding week.—G. J. SYMONS.

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Journal of Horticulture.

THURSDAY, APRIL 21, 1898.

THE JOURNAL OF HORTICULTURE can be obtained from the Office, 12, Mitre Court Chambers, Fleet St. London, post free for a Quarter, 3/9. Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.

IXORAS FOR EXHIBITION.

IXORAS are in the front rank of exhibition plants, and are of considerable value for affording supplies of choice cut flowers throughout the greater part of the year, always provided in each case that the plants are well grown. Many of those sickly-looking bug-infested objects to be seen occasionally would be more in their place on the rubbish heap or in a bonfire, but because they are Ixoras the growers seem to think that they must be preserved, unsightly though they are. Let me, however, warn inexperienced exhibitors that judges invariably appraise Ixoras at their true value; and plants ought, therefore, to be shown in a presentable condition. It is not merely as specimens that Ixoras are of value to the exhibitor. Neat little plants with few or many good trusses of flower are most effective in groups, supplying colours not forthcoming in other flowers, while cut trusses are equally appreciated in stands of stove and greenhouse flowers.

If limited to a single species or variety of Ixora I would unhesitatingly choose *I. coccinea superba*, a variety of free, even vigorous, growth, and which produces large, compact heads of well-formed bright red flowers. *I. Williamsi* also possesses a good constitution, and well-grown plants give a profusion of large heads of reddish salmon flowers. *I. Pilgrimi*, raised from *I. Williamsi*, possesses the same good characteristics, while the flowers, bright orange scarlet in colour, are produced in extra large trusses. *I. Colei*, flowers white, in medium-sized trusses, is also a desirable variety, and not difficult to cultivate. *I. Duffi*, the finest of all the Ixoras, produces huge trusses of crimson red flowers, and *I. salicifolia*, also to be seen occasionally, require more than ordinarily skilful culture, but pay well for the trouble taken with them.

Ixoras can be kept in good health and a serviceable condition for several years, but once these old plants become unhealthy it is very difficult to restore them to a proper state. It is well, therefore, to have a series of young plants coming on to take the place of the worn-out old ones. They are not difficult to propagate. The best time

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to root cuttings is during March and April. Short-jointed shoots of the preceding year's growth, and about 4 inches long, should be selected, cutting these below a joint, but not trimming off the lower leaves and buds, as it is from these buds below the surface that strong growths ought to start during the first two years or so. Insert the cuttings singly in small pots filled with sandy peat, plunge them in bottom heat of 75° to 80°, and keep close till well rooted, this occupying about one month. Give an early shift into 4-inch pots, and it is just possible that a second small shift may be given safely the same season, but overpotting at any period of the plant's life is a great mistake, which has led to many partial or complete failures.

I have been fairly successful in growing *Ixoras* in what may be termed loamy compost, but, all things considered, favour the orthodox mixture of two parts good fibrous peat in a lumpy state for the larger shifts, one part each of leaf soil and fibrous loam of a light character, adding silver sand and crushed charcoal freely. If good fibrous loam is not available, no loam should be included in the compost. It need hardly be added that only clean well-drained pots ought to be used, and that the potting should be done somewhat firmly. No shifts ought to be given later than September.

Ixoras thrive in strong heat, ranging say from 75° to 85° during the spring and summer months, resting them during the winter in a temperature of 60° to 65°. They ought to be shaded from bright sun, and to have the benefit of abundance of moisture in the atmosphere, also frequent forcible syringings with tepid water. If young plants are topped they will not flower till very late in the season, if at all; but topping naturally helps to make them bushy, and to force up strong shoots from below the soil. While resting in a light position, apply enough water to keep the wood plump and the leaves from shrivelling, and do what pruning is necessary in November. *Ixoras* will stand moderately hard pruning, and are best kept in good form by the knife rather than by training.

Late in February or early in March, when the temperature can be raised without the expenditure of much fire heat, start the plants into active growth. They will thrive best if arranged on, rather than plunged in, a hotbed of leaves, or leaves and manure. Repot before much progress has been made, in the case of the older specimens removing much of the soil unoccupied by roots, and so reducing the balls as to admit of repotting in sizes only a little, if any, larger than they were previously in, not forgetting to allow space for ample drainage. Plants required to flower late in July or early in August ought to be started extra early, and in the case of *I. coccinea superba* there must be no topping of the young shoots, or the flowering period will be too late.

The other varieties recommended should not be topped later than March. *I. Duffi* flowers on the strong well-matured growths formed during the year previous, and plants cannot be depended upon, therefore, to flower every season. The way out of the difficulty is to have two sets of plants. When *Ixoras* are first repotted water very carefully, so as to avoid souring the new soil before it can be well occupied by roots; but when roots are abundant copious supplies of water are needed. Plants strongly rooted are also benefited by liquid manure, but this must not be very strong. That formed by placing sheep's droppings in coarse bags, and steeping these in tubs of water for several days, is recommended; and it is safe and good practice to apply Standen's manure sparingly about twice during the season.

Many failures with *Ixoras* may be traced to attacks of insect pests. The plants would appear to be peculiarly liable to be infested by mealy bug, and once overrun by this pest are very difficult to clean. With Mr. J. Cypher, the noted exhibitor, the remedy is Fir-tree oil, diluted and applied as advised by the vendors, coupled with frequent forcible syringings with tepid water, clear soot water also doing good. A close look-out should be kept for any stray insects that may survive the remedies suggested, destroying these saving much labour subsequently. It ought, perhaps, to be added that all plants should be laid on their sides when heavily syringed with either insecticide or clear water, and every precaution taken to keep the soil in the pots from being saturated with it. Both thrips and green fly used at one

time to be troublesome, but since the introduction of nicotine vaporisers their eradication is both safe and simple.

Keeping the plants well supplied with water at the roots during the hottest part of the year, sheltering them from currents of dry air, and syringing freely and often, are preventives of red spider. Scale can be got rid of in the same way as mealy bug, and it only remains to be added that any comparatively violent remedies for destroying either of these pests should be applied while the plants are at rest.—
GROWER AND EXHIBITOR.

PROFITABLE FRUIT GROWING.

(Continued from page 323.)

To show the difference there is in the stuff some men are made of, I may instance the case of two men I knew well, who both started for themselves after serving about the same time in the same market establishment. One took a piece of old pasture land in a good locality, near a good market. He had a Tomato house built 100 feet long, at a cost of some £90 or so. He laid out a large portion of his ground in Strawberries and small bush fruit, simply digging down the turf and planting. The consequence was that weeds and foul grass after the first year got the upper hand. He had a good crop of Tomatoes the first year, as almost anyone will have on fresh soil. The second was not so good, and the third year was a complete failure. He had to clear out last year. His whole stock, including the Tomato house, did not bring much more than £30. This was a square man trying to fill a round hole.

The other man—he, too, made Tomatoes his mainstay the first year. He started in an old market garden entirely overrun with weeds and rubbish, as it was not paying the party who had it previously. He entered at a November term, and what he did the first year I leave him to tell in his own words:—"Dear Sir,—I send you the particulars you asked for; you can use them as you think fit. I will begin with the glass. One house is a lean-to, 200 feet long and 14 feet wide, with three rows of pipes, two flows and one return. The other is span-roofed, 220 feet long and 20 wide, with four rows of pipes, two flows and two return. Two new flued saddle boilers 3 feet long. The pipes, boiler, bends, valves, and fittings complete cost us £62. The glass, which is 21 oz., 18 inches by 24, cost £40. The wood, second quality red pine, also cost £40, the whole coming to £142. The extras, such as bricks, lime, paint and putty, came to £20. Our labour for erecting the two houses at the rate we were working at is twenty weeks at £1 per week—£20. Total for material and building, £182, or 8s. 8d. per foot run. We planted 2000 Tomatoes and gathered 6 tons of fruit, or an average of 6½ lbs. per plant. The average price was 6d. per lb., which made £336, or £154 more than it cost to erect the houses; and we hope to do better this year, as we are at the present time quite two months ahead with our work to last year. I think we have done fairly well, coming into the place and not a vestige on it of any good, but plenty of weeds and dirt. We knocked over £400 out of it, and it is not 2 acres in extent." I may tell you that I have seen the two houses referred to, and they are as good and substantial as any of their kind in the country. This was the right man in the right place, with brains in his head, and not more than one thumb on each hand.

I have said more on this point than I intended, but I am anxious to emphasise the fact—for it is the very root and foundation of success—that unless you are possessed of ability, energy, perseverance, and a love for your work, all the knowledge and experience in the world will avail you little. Some men, though they had served their time in the hanging gardens of Babylon, and been in all the best places in the world ever since—and to hear some of them talk you would think they had—if thrown on their own resources to make a living would make a very poor one indeed. Before leaving this part of my subject, I should like to say a word or two to the young men.

I say, first of all have an aim. Get your whole heart into your work. You will find how much easier and pleasanter your duties will become. Read everything you can lay hold of bearing on your business. Think for yourselves. Try and get to the bottom of things. Begin early to practise your brain in scheming and planning the easiest, the quickest, and the cheapest way to do a given piece of work. Have a method in everything you do, for method is the hinge of business. Try as far as possible to have certain jobs finished at certain times, and that at meal times and stopping times. It makes a great difference in the amount of work gone through in a week if a fresh job, or fresh part of a job, is begun each starting time of a day. Never look in a careless, indifferent way at a tradesman, such as a joiner or mason, doing a job, but "glower" at him and his work. Take note of how it is done. The day may come when you will wish you had paid more attention. A knowledge of other trades is a great service to a head gardener, and doubly so to a market gardener. Not

only should you know the theory of a few of the most useful and common, but if you are able to turn your hand in a creditable way at them you will find it to your advantage; besides, it is a most interesting and instructive pastime. You have met, perhaps, as I have, men who were possessed of as much mechanical genius as would enable them to make a creditable tooth-pick, but no more. I have found in my experience that those who were most "knacky" with their hands were always the best and most useful workmen.

Have an ambition to excel. Remember that you need not be a born genius to be successful in your business. The greater part, if not the whole of success, is made up of strict and intelligent attention to every little detail connected with the thing you wish to accomplish. Did you ever calculate the difference there is between the amount of heat lost or gained by a right or wrong system of ventilating a vinery or other house, where the object should be to make the most of the heat from the sun while it shines? A careless man will open his ventilators when the sun shines, and shut them when it does not, and as often as not he will do the latter five, ten, or fifteen minutes after the sun has gone off the house, and in this time the temperature will have fallen 20°. This may happen half a dozen times a day. Averaging a loss of 20° for four months, you have a total of 2240° of the best and most natural heat you can have for the life and health of plants. You cannot afford to neglect the smallest detail. Pay as much attention to the airing of a cold frame, and do it on the same principle as you do a grand vinery. The results will astonish you, and you will be training yourselves into a system of thoughtful attention and methodical practice which alone will make you clever men and good workmen. Good men, remember, are scarce. The supply is not equal to the demand. I consider a really good and capable gardener, whether head or under, receives only about half the remuneration he should, for the care and responsibility, the intelligent thought, and ingenious resource he has to put into his business is ten times more than a mason, joiner, or like tradesman has to do to earn his £2 per week. If commercial gardening is not already, I think it soon will be the most important branch of our vocation. Plenty of openings there are for able brains and clever hands. Their ability will meet with its due reward.

We will next consider a few general principles which are the root and foundation of all successful fruit cultivation. Outside fruit trees do not receive the attention they deserve. A crop of Grapes or Tomatoes will be either fed each time they are watered or at least have five or six dressings of some fertiliser during the growing season. Did you ever hear of an orchard or bush fruits getting this attention in the way of feeding? If they have some manure dug amongst the roots or a top-dressing once a year it is about all they get, and if they do not fruit well the weather gets the blame. I do not say that more feeding would make all our trees and bushes as they are at present more fruitful. No; it would most likely do the very opposite to many, and make them worse than they are, for I believe there are more trees unfruitful through being too gross than through starvation. But have them planted in the right rooting medium and you will have the right fruiting wood; then give ten times more feeding than what is given now, and it will repay you.

The right rooting medium! That brings me to the most important point—the A B C of successful fruit culture, for unless the growth made by a fruit tree—either out of doors or under glass, from a Vine to a Gooseberry—is of the right material, and made in the right way, you will either get inferior fruit or no fruit at all. This perfect fruitful growth cannot be made without an abundance of small fibrous feeding roots. These small fibrous roots cannot be made unless the rooting medium, or in other words the soil, is in the right condition for their formation; three essentials of which are warmth, moisture, and a degree of firmness, without which wood roots and not fibres will be formed.

I leave out, at present, the consideration of the soil containing the proper ingredients essential to the formation of fruitful growth—for you could have this in all due proportion, and still have unsatisfactory fruit, or none at all. I think I am safe in saying that nearly all the failures or partial failures in Grape and Tomato growing, and in many cases hardy fruit growing, could be traced to loose, or too rich a root run, or both. It is very interesting to study the analogy there is between the animal and the vegetable kingdom, how the same law operates for the same end in both. To get a horse into the best possible condition for hard and trying work, we do not feed him on soft sloppy food to make him fat and sleek, like an unfruitful Apple or Pear tree, with its gross shoots over a yard long. The athlete is neither soft, fat, nor flabby. Neither should be the wood of any fruit tree. I do not think there is sufficient attention given to this matter of firm fruit tree borders. A firm border will not suffer from drought to the extent a loose one will. It will not get wet, consequently will be warmer. It acts as a check on the formation of strong wood roots. Every care and attention should be given when making borders, or preparing ground for fruit trees. Every few inches of soil as it is put on should

be well firmed—not merely treading the top after the job is done to make it look firm.

In reference to the many mixtures and fertilisers we see recommended to add to the soil, I would say, if you have good ordinary fresh loam, the less you add to it the better, and never, unless under most exceptional circumstances, mix farmyard manure with the soil for fruit trees. When I say loam, I do not mean the top few inches of turf taken from old pasture. Wonderful results are no doubt got, and sensational samples of fruit seen from the use of this, but for lasting qualities and profitable results, the whole soil, as well as the turf, should be taken, stones and all. There is not only a mysterious something in fresh loam which suits the requirements of a fruit-bearing tree better than any artificial compound that can be added, but the firmness and solidity of the soil in its natural state forms the best medium for the production of the right kind of roots to make fruitful growth, and I think better results would be secured if the fruit trees were, so to speak, oftener brought to the soil than the soil to the trees.

I have of late had a few opportunities of noting the beneficial results of Vine roots finding their way into fresh original soil. And now, when we have an outside Vine border to make—which we do by simply deepening the soil, as it is very shallow, after the subsoil, which I may state is hard red till, is deepened the required depth, the soil is put back with more added to it on the top. This we like done at least one year before we expect the roots to enter it. This gives it time to get firm by natural agencies.

As this subject of the right rooting medium is in my opinion at the foundation of all success, it is my excuse for dwelling so long upon it. If the foundation is wrong, the whole superstructure will be faulty and bad. The details of pruning and training are of little importance compared to this; for if the roots are right the wood will be right, and little or no pruning will be required; pruning and restricting a gross growing tree only aggravates the evil. If it were allowed to extend it might right itself through time. I have seen—and in this country—a man do all the pruning that was necessary to several breaks and borders of Gooseberries in a little over two hours time, and I have seen these same bushes annually supported by long runners of wood to prevent the branches breaking off with weight of fruit, and this year after year. We have a row of Winham's Industry Gooseberry which has carried enormous crops for the last four seasons, which have had to be supported in the same way, and which have never had a knife on them since they were planted young bushes till this winter. Gooseberries as a rule are pruned far too much. I think, on this subject, there is more rule of thumb practice shown than I thought the present generation of gardeners capable of.

—D. BUCHANAN.

(To be continued.)

GLOBE ARTICHOKE.

THERE are two varieties of this much-prized vegetable in cultivation, both of which are indigenous to the countries bounding the Mediterranean. This being a more genial climate than our own, the plants are benefited by some kind of protection during the winter months, and although they will not suffer to any extent if left unprotected in the majority of our seasons, it will be found advantageous to be prepared in this respect, for in winters of extraordinary severity the Globe Artichoke has been quite destroyed.

The soil best suited to this plant is one abounding in moisture, such as a good deep loam impregnated with a large portion of saline matter. In dry sandy soils the produce will be inferior—indeed, scarcely worth the time bestowed in cultivation. The position allotted to the plants should be an open one, and well away from the influence of large trees. As regards manure, seaweed has the precedence; but as this is not always procurable, a good dressing of well-decayed stable manure should be applied early in the spring. This may be dug in together with the rough litter and leaves used for winter protection. A sprinkling of common salt will benefit the plants considerably, and should be applied in the same proportion and at the same time as is usually given to Asparagus beds. In the event of seaweed being procurable, this latter, of course, will not be needed.

In preparing the ground for new plantations, it should be trenched to the depth of 2 feet, and be well enriched with manure and wood ashes. It is also an excellent plan to mulch the beds well after planting to retain the moisture, and this can remain on the whole summer with advantage. The usual way is to plant suckers from the old stools, and this is most expeditious, and is best performed early in April, selecting such as have abundance of fibrous roots. The rows should be 5 feet apart, and 4 feet ought to be allowed from plant to plant. Water may be applied when this operation is completed, and then a mulching can be put on. The only attention required during the summer is the frequent use of the Dutch hoe, and with occasional waterings in very dry weather. The plants will produce a succession of heads from July to the end of August the first year after planting, and they will continue to increase in productiveness for a period of four or five years, when a new plantation should be made. By planting afresh at the intervals named, it will be noted that the edible part will be much superior both in size and quality to heads obtained from old plants.—H. T. M., *Stoneleigh*.

APRIL FLOWERS.

TYPICAL April weather, with its smiles and tears, brings with it many flowers, and paves the way for the wealth of May. The Primrose shines in shady nooks; on the heath the Furze is aglow with gold; the Blackthorn is wreathed in white, and the Celandine is bright with its stars of gold. In the wood, the orchard, the shrubbery, and the garden the beauties of the outer world are brought closer together, and our eyes are gladdened by the sight of their flowers. The theme is wide, but we must curb ourselves and look more narrowly into the flowers of the time. Hardy flowers themselves branch out into many families, and we are apt to become entangled in the delights of a few genera to the neglect of others, unless we are wary, and seek to extricate ourselves in time. We might well dally with the Daffodils, coquet with the Fritillaries, or spend all our time among the Primulas or Violas, so full of beauty in the youth of the year.

If we dally long with the first, we may find ourselves tempted to tell of the rarer flowers sacred to the gardens of the wealthy, and to say naught of the gracious beauty of those within the reach of the many, and which may be planted singly or in generous clumps, as the purse or fancy of the gardener may allow. Enthusiasts possessed of means enough can purchase Monarch, Weardale Perfection, or other Daffodils which, as it were, bear the blue ribbon for the time, but others may find equal enjoyment in admiring Emperor, Empress, and the many other Narcissi, full of beauty, and within the reach of prince and peasant. Others may tell of the newer and rarer varieties, and many of these have been figured in the Journal. Their fascinations are great, but the clumps of the commoner kinds appeal to almost all as they float gently to and fro in the April winds. One only shall be mentioned now, and that because of its earliness among the section—that of the *Incomparabilis* Daffodils—to which it belongs. This is Queen Bess, with large light yellow expanded cup, and pure white perianth segments. Beautiful it is, and so cheap that he is poor indeed who cannot include it among his garden treasures.

Queer things are the Fritillaries to those who know them not, and quaint do they seem always to those who know them best. The majority of us have to content ourselves with seeing Gerard's "Ginnie-hen flower" in our gardens instead of by the grassy meadows of the Thames. In moist nook or on rocky bank they please us with their drooping bells, but their beauty is best seen when their flowers are turned up by the hand and their interior viewed. If *Fritillaria meleagris* is easily grown as much may be said for *F. acmopetala*, *F. Thunbergi*, *F. pallidiflora*, and several others. Less confident we may well be if we plant *F. recurva*, *F. aurea*, *F. Moggridgei*, and *F. Burnati*. We may grow them for a year or two, but in many gardens they are difficult to keep beyond that time.

The Primulas have more worshippers at their shrine. There is no prettier sight in our British sylvan scenes than a "mossy bank bedight" with the starry flowers of our native Primrose. Much of the beauty of our gardens is due to the varieties which have sprung from this pale-flowered mother. Crimson, scarlets, purples, pinks, lilacs, deep yellows, cream coloured, pure whites, and now wonderfully good blues proclaim the power of cultivation to influence for change. Clustered Polyanthus, Oxlips, and Cowslips are speaking witnesses of the charms of the Primula in gardens many, and of all sizes. And what of the Auriculas? They, with others of the genus, will soon hold court at the Drill Hall, for lack of a more seemly palace, and though we shall not be there we can think of these flowers and their followers. In "Auriculas: A Garden Fancy" Mr. Baildon tells of them in words one would fain quote were it not that space fails. These have, worthily, their devotees, and with them those who delight in the less grown species will admire their own favourites. *Primula marginata*, *P. denticulata*, with its variety *cashmeriana*, *P. Steini*, *P. viscosa*, *P. ciliata*, *P. carniolica*, *P. Dinyana*—these, and many more, have claims on our admiration, with their flowers of many hues and shades. In the border or the rock garden they may share our affections with others of the race.

The earlier Violas have begun to come; but who can say he is able to keep abreast of the host of varieties now open to seek a place in our gardens? Their name is legion, and still they come—white and yellow, blue and purple, lilac, brown, pink, striped, spotted, rayless and rayed, large flowered and small. Very beautiful they are, and we cannot spare them, though they grow beside and eclipse the little wildings from our own or other lands.

But a paragraph remains for a glance at other flowers in bloom. The early Rhododendrons are in blow. *Prunus Pissardi*—the earlier flowers stolen from us by the frost—is again wreathed over its branches. Dog's Tooth Violets, such as *Erythronium revolutum*, *E. citrinum*, and others, turn back their segments and please us by their pretty flowers. Early Saxifrages, Aubrietias, Drabas, Androsaces, and other rock-garden plants brighten the mounds and slopes they occupy. There are yet Glories of the Snow, Hepaticas, *Ornithogalum ciliatum*—an early bloomer—Scillas, Anemones, from the great red,

blue, white, and parti-coloured *A. coronaria* to the simple varieties of the Wood Anemone and that from the Apennines.

As we see all the beauty of the time we recognise how aptly one of our living poets changes his expressive words from "girlish laughter" and "girlish tears" to "golden laughter" and "golden tears." Golden, indeed, are these moods of April—treasure-laden to those longing for the summer days.—S. ARNOTT.

SYRINGING PLANTS.

THE time of the year has arrived when the value of syringing plants growing under glass as an aid to high culture can scarcely be over-estimated. At one time I was rather dubious about syringing many kinds of plants which I have found out since are greatly benefited by the practice. It may be that modern houses, which are so lightly built, may have something to do with the change of practice. I think they have, for in houses of the old type the evaporation from the leaves of plants must have been very slow compared with the rate in which it goes on in the case of plants growing in modern houses, which now seem to have reached a point in regard to lightness of construction beyond which it is not desirable to go.

The point which now requires more general consideration is that of providing adequate means of ventilation. Houses put up by firms of repute are usually well arranged in this respect, but when they are built by men who are not specialists, very haphazard methods of providing ventilation are often resorted to. This is surely false economy, because there is nothing that can mar so quickly the prospect of any crop growing under glass as insufficient ventilating at a critical time. When houses cannot be given the requisite amount of air, there are two ways of preventing the vegetation growing in them from being greatly injured by such circumstances. I have written there are two ways, but in reality they may be considered as one, as they should be practised in conjunction. I refer to shading and syringing.

The present day method of growing Cucumbers illustrates my point. Instead of making the airing of such houses a source of perpetual trouble we now keep them saturated with moisture and lightly shaded in bright weather, and thus secure quickly grown and tender fruits at a minimum of cost in labour and fuel. This principle, I think, may be partially applied to plants growing in what should be cool houses, but which are not so in bright weather owing to the little amount of ventilation which can be given. A slight shade given to the roof, and a thorough syringing to the plants, will keep them healthy and vigorous.

The popular Marguerite when grown in cold pits on an ash bottom will often thrive well without syringing, but place them in light houses of modern construction, attend to them well in other respects, but do not syringe; then very unsatisfactory results follow, for the plants are continually infested with green fly, and almost invariably with the dreaded maggot. A thorough syringing twice daily would have brought about results infinitely more satisfactory. In fact, the white Marguerite enjoys syringing as much as do the incurved and Japanese Chrysanthemums. Rose trees in cool houses, which are now rapidly coming into flower, enjoy their daily syringing, and soon show ill effects when it is withheld. The water thus applied not only helps to keep both foliage and flowers clean, but also to promote rapid growth, and swell flower buds to a large size.

Ivy-leaved Pelargoniums again, especially when growing in ill-ventilated houses, delight in receiving daily syringings; the growth then comes freely, and insect pests are kept down. Even Zonal Pelargoniums in the early stages of growth after being repotted are benefited by the same practice, although it is in their case not wise to continue it when the plants are growing freely, as it is apt to induce strong sappy growth. Dracenas, Palms, Coleus, Fuchsias, Callas, Azaleas, Aralias, Crotons, and indeed almost all fine-foliaged stove and greenhouse plants, revel in repeated syringings during spring and summer.

A mistake to avoid is to syringe indiscriminately alike in all weathers. During dull or wet periods only an occasional syringing should be given, then with a sudden change to bright weather, the plants feel the benefit of a return to the practice of receiving copious "artificial showers." Fortunately, such showers are more under control than natural ones, as we can give them an upward force, so directed as to wet the under as well as the upper surface of the leaves, and thus disturb in their hiding place the many insects which seem to feel secure on the under sides of leaves. Although it is not generally admitted that leaves absorb moisture to any great extent, there can be no doubt that growth in nearly all kinds of vegetation is greatly promoted by showers of natural or artificial rain. One reason for this is that evaporation is greatly lessened; but another, which is often overlooked, is that the moisture also conveys gases to the leaves which they have the power of absorbing through their pores, and thus materially assisting in the formation of growth.—A WORKER.



EULOPHIELLA PEETERSIANA.

THIS is a superb Orchid, and is far superior to the now comparatively well known *Eulophiella Elisabethæ*. It was shown by Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, where it is flowering for the first time in this country. The spike is of great length, and carries upwards of a score of expanded flowers and buds. The individual flowers are of a rich rose, with a suffusion of purple over the sepals and petals and the front lobe of the lip. The inner portion of the lip and the throat are white, the latter having veins of crimson-rose, while the colour of the side lobes is the same as that of the sepals. The Orchid Committee awarded a first-class certificate for this plant, of which a flower is depicted in the woodcut (fig. 66).

EPIDENDRUM BICORNUTUM.

IN the Orchid section of the last Drill Hall exhibition one of the most interesting exhibits was the group of *Epidendrum* (*Diacrium*) *bicornutum* staged by Mr. F. J. Thorne, gardener to Major Joicey of Sunningdale. As every Orchid grower knows, this is one of those "miffy" plants with which few people have any success, and it was therefore a surprise to many to see the healthy plants with their rich green leaves and grand spikes of lovely flowers. As an eminent authority on Orchids said to me, "They are a triumph of cultural skill." I, for one, wish I could attain similar results, as it is an Orchid that everyone admires.

Messrs. J. Veitch & Sons in their "Orchid Manual" say, "This Orchid has frequently proved disappointing, a circumstance partly due, we have no doubt, to the difficulty of importing it in sound condition. Its hollow stems are inhabited by small ants, which find ingress through a cleft at the base, that invariably occurs in the new growths under cultivation, and probably also in a wild state; they are prone to decay from within, and frequently crack during transmission, and in however small a degree they may be so affected the plants never get well established in the glass houses of this country, and die in the course of two or three years after importation. With thoroughly sound plants the case is more hopeful. Teak baskets are usually preferred, and as they require but a very small quantity of compost a good drainage can always be secured. The compost should consist of the usual proportions of sphagnum and fibrous peat, with which many cultivators mix some pieces of charcoal. The habitat of the species indicates a high temperature and moist atmosphere, and these conditions are therefore necessary, especially while the plant is growing." So far as possible I have followed the suggestions embodied in this note, but have always failed to reach success. Perhaps Mr. Thorne would oblige with a few hints as to treatment in the *Journal of Horticulture*, as I feel sure they would be appreciated by many besides myself.—KENTISH MAN.

[We have received a photograph of Mr. Thorne's best plant, which shows it to be carrying six strong spikes, but as one was broken off prior to the picture being taken, the plant produced seven spikes. This is such an excellent example of cultural skill that we much regret the photo being unsuitable for reproduction. We heartily congratulate Mr. Thorne on his success with this and other Orchids, and trust that he will find time to render assistance to our Kentish correspondent. *E. bicornutum* was figured in the *Journal of Horticulture* for July 9th, 1896, page 29.]

THE STRUCTURE AND CLASSIFICATION OF MUSHROOMS.

WHATEVER may be the cause of the present popular interest in Mushrooms, it is evident not only to botanists, but to casual readers of the monthly periodicals and of the daily press, that within a few years this interest has grown largely, and that it is spreading widely. Its manifestations are various and unmistakeable; but most of them have taken the form of demands for information and of the responses of those who have been willing to give it.

Most of the numerous articles that have appeared have been concerned with showing the difference between edible and poisonous kinds of Mushrooms (or Toadstools, which are the same thing). There are, however, many persons who wish to know something about Mushrooms as plants, and perhaps to engage in limited studies concerning them. These people generally lack a knowledge of the elementary facts concerning structure and classification that would make easy an attack upon the literature of the subject. To such would-be students of a small part of the field of mycology this lecture is addressed in the hope that it may be of some assistance.

At the outset it will be well to come to an understanding as to the term "Mushroom" itself. In everyday language it usually means the sort of fleshy fungus that is good to eat, and particularly—to some people only—the common pasture kind. A "Toadstool," on the other hand, means something poisonous, or at least to be avoided. As a matter of fact, no distinction can be made between the two terms, though the term Toadstool is more comprehensive, for it may be used to include the common pasture Mushroom and all other fungi whose form is in general the same.

If we look at a common Mushroom of the pasture or the market, we see that it may be easily divided into two parts—an upright stalk, called the "stipe," and a flat, expanded portion, the "cap" or "pileus." Attached to the under side of the cap are membranous plates, the "gills," or "laminae," radiating from the top of the stipe to the edge of the pileus. The upper part of the gills is attached to the lower surface of the cap, and their lower edges, which are usually very thin and rather sharp, hang free. In the Mushroom that we are examining there is a space between the crowded inner ends of the gills and the top of the stem.

In other kinds of Mushrooms we may find the same condition of things, or it may be that the gills reach the stem and are attached to it, or even run down upon it as ridges, which in some cases end abruptly and in others are gradually reduced to mere lines. Upon the gills are borne in countless numbers the spores—exceedingly minute bodies, which, as it is their office to germinate and grow into new Mushroom plants,

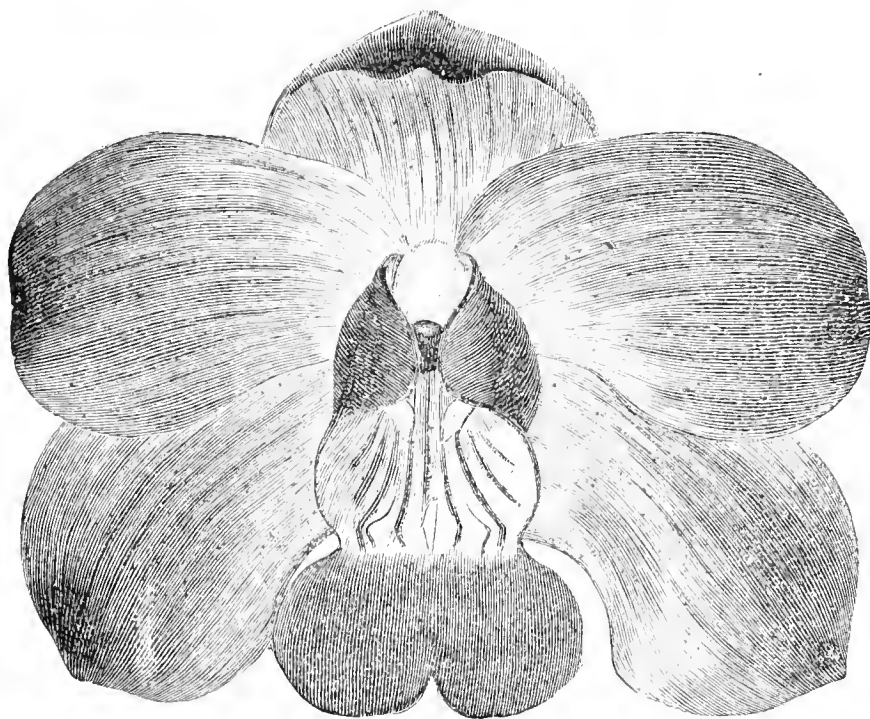


FIG. 66.—EULOPHIELLA PEETERSIANA.

may be roughly compared to seeds. The Mushroom, in fact, as we see it, is nothing but a contrivance for the production and dissemination of the spores. The arrangement of the gills gives an enormous spore-bearing surface, whence the spores are carried by the wind or by insects, or drop to the ground below. If the cap of a fully grown Mushroom be cut from the stem and laid, gills downward, on paper under a tumbler or other cover to keep draughts away, there will be found on the paper after a few hours—sometimes in a very short time—a layer of spores, making a negative print of the gills. In the common Mushroom this print will be of a dark brown—almost a purple brown—the colour, it will be noticed, of the gills at maturity, for the gills usually take the colour of the spores.

Stem, cap, and gills are characteristic parts of most of the fungi commonly called Mushrooms or Toadstools. There are other structures, however, peculiar to certain groups. These are a "volva," a "ring," and a "veil." The common Mushroom does not possess the volva, or sheath, characteristic of the poisonous *Amanita*, but does show us a ring and veil.

If we look at a young specimen that has not been long above ground and is still in its compact, rounded form, called by Mushroom growers a "button," we shall see no gills on the under side of the cap. Indeed, the Mushroom may sometimes grow to nearly its full height before they are visible. The reason is easy to see, for stretching unbroken from the edge of the unexpanded pileus to the stem is a delicate membrane called the veil. As the pileus expands the veil is torn. Shreds of it, perhaps, cling to the edge of the cap, but most of it remains, encircling the stem and thus forming a ring—a structure the appearance and size of which vary in the different sorts of Mushrooms which possess one.

The structures so far spoken of are easily seen, but there is much more to a Mushroom than this. You have been told that a Mushroom is simply a contrivance for bearing spores. It is thus comparable to the fruit of a flowering plant, which develops and contains the seeds. Where, then, you will ask, is the vegetative part of the plant, the part that absorbs the nourishment and does all the preparatory work of which the growth of the Mushroom itself is the result? In other words, what sort of a plant develops from a spore, and where does it live? If you could follow, as you may under a microscope, the germination of a spore, and the stages of growth which follow, your eyes would give you the answer to

the first part of this question. You would see the minute spherical or ellipsoid bodies, when supplied with the requisite moisture, burst and put forth slender colourless threads called "hyphæ." These in time branch again and again, extending constantly in length to form what is called the "mycelium," or vegetative part of the plant. When such threads are massed together in strands, forming white lacework or cottony bunches, they are easily found in the substratum on which the fungus grows—in rotten wood, for instance, or in a heap of leaves, or other decaying vegetable matter. In such places the mycelium spreads over or permeates the substance from which it draws its food supply. For fungi do not elaborate their food from raw materials as do the plants that have green colouring matter, but are dependant upon other vegetable or animal organisms, either living or dead; that is, they are parasites, or saprophytes.

What is known by Mushroom growers as the "spawn" consists of a dried compressed portion of a Mushroom bed, generally mixed straw and horse droppings, which is permeated by the mycelium. In this condition, in the form of flakes or bricks, it may be transported, and will keep its vitality for months, active growth being for the time arrested. As a rule, then, when Mushroom beds are started, it is the mycelium or spawn which is planted—not the spores. When the proper conditions of warmth and moisture are supplied, growth is resumed, and the threads, lengthening and branching, very soon spread throughout the bed.

It is plain, then, that the Mushroom plant for most of its life is out of sight, and consequently not familiarly known. To this fact are due many erroneous notions about the origin of Mushrooms themselves. When the time has come for the plant to produce its fruit, there form at various points in the mycelium small masses of densely branching interwoven threads, which in time enlarge to an appreciable size. Each of these masses is the beginning of a button, or nascent Mushroom. An examination of buttons in various stages of growth, by means of thin sections brought into the field of a compound microscope, shows pretty clearly the part played by the hyphæ in the Mushroom proper, the substance of which is made up of the compacted and closely interwoven threads and their branches. Along certain radiating lines is formed the framework of the gills, which in the developed Mushroom is called the "trama." Just below the gills an air space appears, the outer wall of which becomes the so-called veil. Lastly, upon the surface of the gills develops a layer of cells standing side by side like the single threads in the pile of velvet or in the surface of an oriental rug.

With these cells we have a special concern. Taken together they form the "hymenium," the spore-producing tissue, which, folded like a fan, is applied to both sides of the gill-plates. A section through a gill shows us this layer. Each one of the club-shaped spore-bearing cells composing it is called a "basidium." Each basidium bears four spores on minute stalks.

Passing some other groups we come to the Morels, Helvellas, and Pezizas. The first two are stalked, and roughly resemble the familiar Agarics; the last are shallow cups or fleshy expansions. A word as to the form of their fructification must suffice. Examination under a microscope of a bit of the outer or upper surface of one of these plants will reveal a mat of crowded slender cylindrical cells covering the surface; none of these cells, however, bears spores on its tip. Instead, some of them—not all—contain spores in their interior. Each is, in fact, a little enclosure, called an "ascus," and if one that is mature be separated from the rest it will readily be seen to contain eight—almost invariably eight—spores. At the proper time these escape from the asci, sometimes suddenly and myriads at once. From the surface of a Peziza, for example, as you look at it, there comes a little puff of smoke as the ejected spores are shot into the air, to be blown away in a tiny cloud. Pezizas, Helvellas, and Morels are some of the "Discomycetes," a class excellently treated for Great Britain by Phillips. Multitudes of fungi besides the Discomycetes have a fructification which consists of asci, and the comprehensive name for all of them is Ascomycetes.

Most of the Mushrooms gathered by the increasing number of fungus hunters, at least by beginners in the study, belong to that class of Basidiomycetes called Hymenomycetes. Among these an Agaric is at once recognised by its gills; a Boletus or Polyporus by its spores; a Hydnum by its tooth-like projections; a Clavaria by its coral-like appearance; and a Tremella by its gelatinous nature. So far identification is a simple matter; but to go farther and decide upon the species requires close study, accurate observation of details of structure, ability to interpret published descriptions, and, most of all, experience.—(Abridged from a Paper read by MR. HOLLIS WEBSTER at a meeting of the Massachusetts Horticultural Society.)

"BLACKS" IN POTATOES.

MR. W. PEA (page 320) in his criticism of my article on this subject (page 276) provides a literary repast. The dish, however, like exhibition Potatoes, seems got up to take the eye. It is dainty, but not satisfying. Having disposed of "blacks" by ignoring them, your versatile correspondent comes to the question in respect of the old sorts *versus* new kinds of Potatoes as regards quality. The Old Ashtop Kidney, Lapstone, and York Regent, with Fluke (to make the quartette) may be described as "ancient," and Webber's White Beauty, Duke of York, Windsor Castle, and Up-to-Date "modern" varieties. What say cultivators prior to the advent of the disease in 1844 of the quality of Potatoes in those days as compared with that of the moderns? The so-called disease-resisting varieties have been produced to such an extent at the expense of quality, that the Royal Horticultural Society's Fruit and Vegetable

Committee always relegate modern sorts to Chiswick for trial, and have the articles cooked before expressing an opinion on their merits or otherwise. Thus quality is placed foremost. When subjected to the crucial test of eating, the most that even Mr. W. Pea can claim for the latest outcome, Up-to-Date, is "respectable flavour." What has become of high quality—the "crack their sides" with mealiness tubers, and if once tasted, never forgotten nutty flavour?

Webber's White Beauty may yield double the crop of the Old Ashtop Kidney, but where is it for earliness?—a matter of consequence as regards price and clearance of the land for an after crop, often of as much or more value than the Potatoes; and then, as regards return, wherein consists the difference in profitable production? Besides, while the Old Ashtop Kidney is quite fit for an epicurean taste, the "Beauty" only finds favour with the masses in towns, who set more store upon quantity than quality. Duke of York represents constitutional vigour and coarseness with negation of high quality. Windsor Castle needs considerable qualification, and I cannot describe its quality as comparable with that of York Regent. As for cropping, York Regent, on warp, has given 25 tons per acre, and a single set 44 lbs. In an 80-acre field, in 1897, Windsor Castle gave a yield of 12½ tons per acre.

Now we come to the "modern" Potato *par excellence*, "the tough hardy constitution, respectable quality, and magnificent cropping and disease-resisting powers." All efforts of late years have been directed to avoiding the Potato disease, yet the all-important Magnum Bonum, the doughty Champion, and the Bruce, all fall before the Raphael Aben-Ezra Potato fungus, only Up-to-Date holding up its head.

Mr. W. Pea says nothing about "blacks" except in connection with "injurious acidity." This betrays some acquaintance with the subject by one who has "been experimenting with Potato manures rather freely during the last few years," and he seems to have been convinced by "one trial" that a muriate manure is the best he has found. The modern experimentalists do not appear to see that by cropping with Potatoes, and applying heavy dressings of manure successively on the same land with but one cereal or other crop in alternate years, the ground may be soured by organic acids as badly as by the use of acid fertilisers, muriate (chloride), or sulphate (sulphuric). "A. D." grasps this fact, hence his "jumping" at lime, which in older times answered well enough, but in these days oftener does the reverse, by burning and blackening crops in consequence of the acid fertilisers applied. How many growers have suffered serious loss by the use of kainit, muriate of potash, and acid phosphate? Who found it out that they were injurious? Or who advised autumn application before growers had found spring dressing sinister? What produced "blacks" formerly does the same now; the one caused by inattention to rotation, and the other by a wholesale and injudicious use of fertilisers.

Just a few words relative to the one-eighth acre experiments. How long have they been conducted on the same land? Mark, there does not exist much change of crop on allotments, and one experiment proves nothing, for a mere changing of fertilisers affects the land wonderfully, while the continuation of the same mixture may result in disaster. The prescription given on page 320 consists of 32 tons per acre of farmyard manure, costing at least £8, and of 10 cwt. per acre of artificial fertiliser in mixture, entailing an outlay of something like £4, which, with labour and planting, amounts to half as much more, or about £18 per acre. Try it as a commercial concern, not once, but over a series of years, and then send the result to the Journal, if, indeed, there be any result left wherewith to procure the needful. Experience has taught me that fertilisers are unprofitable unless they lessen the need of farmyard manure to the benefit of a larger range of crops.

Reverting to "A. D." (page 303), will he kindly say what three present day varieties of Potatoes he has found equal in quality to the old Ashtop Kidney, Fox's Seedling, and Prince Regent? three varieties—early, second early, and late respectively. I find them enumerated in a catalogue issued by Messrs. Thomas & James Backhouse, York (third edition), in 1827.

In 1844 the three varieties—Ashtop Kidney, Lapstone or Haigh's Seedling, and Prince or York Regent—were the standard for early, second early, and late use, and I submit they have not been excelled since for quality. "A. D." can term the dictum "strained" or "untrue," but that will not alter my half-century's experience in arriving at a decision regarding the so-called "up-to-date" varieties—a coarse and poor quality lot. Of several hundred varieties submitted to trial not any that I have grown, or seen grown, have the mealy quality and rich flavour of the fifty years ago varieties.

Not long ago "A. D." made light of the Potato disease causing the "blacks"—a phase of the matter, he now says, demands the "fullest consideration." As to "the denudation of leafage by the fungus" causing the evil, that is a matter of opinion, worth nothing unless backed by experience, and I state it as a fact that Potatoes were infested by "blacks" before the appearance of the Potato fungus in 1844. What caused them then? "A. D." puts forward lime as a cure for "blacks," a mere conjecture—at least, there is no evidence that this element has anything to do with freedom or otherwise of the tubers from discolouration. How does he know that lime has anything to do with the production of starch, or what this has to do with "blacks," or even the Potato fungus? Bordeaux mixture appears the thing for preventing the Potato disease, but your correspondent seems unaware that "a green vigorous condition" is just that in which the fungus delights, and the resultant tubers are discoloured by disease, even if there is up to 10 per cent. of lime in the soil. The proper draining and working of the soil exerts a more wholesome influence. Let "A. D." give the matter fuller consideration.—EXPERIMENTALIST.



WEATHER IN LONDON.—Brilliant weather has prevailed in London during the past seven days. It has been warm on almost every day in the sun, but the wind was sharp on one or two occasions in shady places. The nights continue to be rather chilly, but have not been sufficiently cold to do harm to vegetation.

— WEATHER IN THE NORTH.—With the exception of the 13th, which was very wet, with a high wind from the south, the week ending the morning of Tuesday has been very pleasant, cloud and sunshine alternating, and showers falling occasionally. The temperature has been generally high, although it fell considerably on one or two evenings. That of Tuesday morning was 48°.—B. D., *S. Perthshire*.

— ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, April 26th, in the Drill Hall, James Street, Victoria Street, Westminster, 1 to 5 P.M., when, in addition to the Society's ordinary Show, the National Anemone and Primula Society will hold its annual show. At three o'clock a lecture will be given on "Sweet-scented Leaves versus Fragrant Flowers," by Mr. F. W. Burbidge, M.A., V.M.H.

— HORTICULTURAL CLUB.—The usual monthly dinner and conversazione took place on Tuesday evening, April 12th. Notwithstanding the holidays and the Ghent Exhibition, which drew off several of the members, there was a good attendance. The chair was occupied by Mr. George Paul, V.M.H. The Rev. George Engleheart was the guest of the evening, and gave a very valuable address on Seedling Narcissi, in raising which, as is well known, he has been so successful. He exhibited some of his latest productions, which were greatly admired, and had previously obtained awards of merit at the Drill Hall. An interesting discussion followed, in which many of those present joined.

— MEMORIAL TO MONS. JEAN LINDEN.—We have received a circular from Belgium from which we learn that there is a project on foot in that country to found a memorial of Mons. Jean Linden, the distinguished botanist and horticulturist, whose demise we chronicled some time back. A committee of influential gentlemen has been formed, with Comte O. de Kerchove de Denterghen as President, and Mons. L. Lubbers, Brussels, as Secretary. The Treasurer is Mons. L. Kegeljan, Namur. The appeal is made to every one interested in horticulture, and those who would like particulars should write for them to the Secretary.

— AN IDEAL TENNIS GROUND.—When looking at the illustration given last week of a tennis ground, I could but be thankful I had not been trained in the school of the landscape gardener. For destroying the natural and charming contour of the ground I could not imagine a better example. The excavated court is to me an eyesore. A tennis court should be comparatively near the mansion, and not a quarter of a mile away, as shown in the picture. To enjoy lawn tennis thoroughly the turf, whilst dense, should be soft and springy. Then play upon it is delightful. A very hard unresponsive ground is not pleasing, and it is tiring. Then near courts for summer use there should always be trees to give shade. Winter courts, asphalted, should be enclosed with Cupresses or Holly hedges, and may be more remote from the mansion.—A. D.

— MAGNOLIA CONSPICUA.—In several gardens about London this beautiful species is flowering grandly. At Kew, a large healthy specimen growing in the Azalea garden is now (April 15th) at its best, every twig being loaded with large, sweetly scented, pure white blossoms. Every garden where hardy trees and shrubs are grown to any extent—especially in the southern counties—should possess one or more specimens of this, for, if given a position sheltered from cold winds, and planted well at the commencement in a mixture of peat and loam, it will give little or no trouble afterwards, and will, every spring, be literally smothered with flowers. There are numerous hybrids in cultivation, the result of crosses between this species and others. Of the hybrids several may be seen at Kew, the largest plant being a magnificent specimen of *M. Soulangeana* growing near the plant of *conspicua*. It is a much larger plant than the parent, measuring about 14 feet each way, and is completely covered with purple and white flowers.—K. R.

— GARDENING APPOINTMENTS.—Mr. Thomas Winksill, late head gardener to A. R. Sladen, Esq., Cleeve House, Windermere, has been appointed head gardener to J. Charlton Parr, Esq., Staunton Park, Staunton-on-Arrow, Herefordshire. Mr. G. A. Bishop, late head gardener at Wightwick Manor, Wolverhampton, has been appointed by the Secretary of State for the Colonies, superintendent of the Botanic Station, Bermuda, and expects to enter on his important charge during the ensuing month. Mr. Bishop has been chosen strictly by varied qualifications for the position which all who know him will not doubt his ability to fill creditably and well.

— WISTARIA SINENSIS.—As a quick-growing, free-flowering, hardy climber this has no equal, and judging from the numbers that are found in all parts of the country, it enjoys well-deserved popularity. It is not, however, as a climbing plant for outside that I wish to bring it to notice now, but as a pot plant for the greenhouse in spring. In the conservatory at Kew a small group of plants, which have been slightly forced, are to be seen, and they are there flowering, if anything, more freely than they do outside. When required for forcing, strong young shoots should be layered. When rooted they should be potted in rich fairly heavy loam, and grown on in pots, flowers being produced the second year after potting. After flowering they should not be planted out, but be fed and grown on in pots. Anyone who gives this plant a fair trial for this work cannot fail to be pleased with the results.—KEWITE.

— TOPPING RASPBERRY AND BLACKBERRY PLANTS.—In commercial fruit growing it is almost a universal practice to top the canes of Raspberries and Blackberries when growing in order to make them stocky and self-supporting, as this is a great saving of time and expense. The canes have their tops pinched off when about 2 feet high. The side shoots, which come then, add another foot or two of length before the season is over. This process gives stout bushes, which sustain themselves without any staking or support. When the winter is over the side shoots are clipped back a little, and nothing else is required. These stocky, self-supporting canes, though bearing more berries than those not treated as these were, do not, says a writer in an American journal, bear more weight of fruit. The largest berries come from plants let grow as they will for the season, and cut back to 3 or 4 feet in early spring. Growers must decide between large berries and self-supporting plants. In England there are plenty of Raspberry canes that support themselves without being topped in summer.

— THE EDIBLE PASSION FLOWER.—For draping pillars and arches in the stove, *Passiflora edulis* ranks as one of the most magnificent climbers we have, for when planted in a restricted border it grows luxuriantly, often making shoots of 12 feet or more in one season. The flowers of this species are very beautiful, and are succeeded by handsome purple fruits, which are much appreciated by many persons. The leaves are of a deep glossy green colour, and form a fine contrast to the purple fruits, and for this reason they are admirably adapted for dishes of choice dessert fruits, such as Bananas, Figs, and Peaches. *P. edulis* may be readily propagated by means of cuttings or layers, and during the growing season abundance of root moisture with occasional applications of liquid manure should be given the plants, accompanied with frequent syringings to keep down red spider. I have seen this plant growing well in a cool house, but much better results are obtained by giving it a position in the stove, provided that a portion of the roof near the ventilators can be devoted to it, a stagnant atmosphere being prejudicial to the setting of the flowers.—H. T. M., *Stoncleigh*.

— NATIONAL AMATEUR GARDENERS' ASSOCIATION (LIVERPOOL BRANCH).—On Thursday evening the third meeting of the season was held in the Common Hall, Hackins Hey, Liverpool, the President (J. H. Drake, Esq.) occupying the chair. There was an excellent attendance of members, and the exhibits were much above the average, making altogether a pretty display. Mr. Lunt won with a handsome *Azalea indica*, Mr. Cangle following. The cut Roses staged by Mr. Hoskyn were of superb form and quality, the prize for Fern and miscellaneous cut flowers being taken by Messrs. Lunt and Cangle, these gentlemen also dividing the monthly special prize. The flowers and plants staged for points were exceptionally good. Mr. J. Cliffe, gardener to J. Lawson, Esq., Waterloo, gave an admirable lecture on "Stopping and Trimming Chrysanthemums," which was listened to with the greatest attention, his advice being eminently practical; a vote of thanks was deservedly accorded. Messrs. Smyth, Cooper, and Cangle carried out the duties in connection with the meeting most satisfactorily. Mr. R. Pinnington, Roby, had a fine exhibit of cut flowers, which was much appreciated.

— **SHIRLEY GARDENERS' ASSOCIATION.**—The monthly meeting of the above Society was held at the Parish Room, Shirley, Southampton, on the 18th inst., Mr. B. Ladhams presiding over a fair attendance of members. Mr. Jesse Jones, The Gardens, Terrace House, Polygon, Southampton, gave a very interesting and useful paper on "Table Plants and Plants for House Decoration."

— **TREE FERNS.**—*Alsophila australis* and *A. excelsa* are both rapid-growing Tree Ferns, the last named especially soon attaining to the arborescent state. The habit of growth of these two varieties differs somewhat. The fronds of *A. australis* have a horizontal or spreading growth, while those of *A. excelsa* are more upright, especially at the base, whence they curve in a graceful arching manner.—S.

— **PRUNUS SPINOSA FLORE-PLENO.**—The double flowered form of the Blackthorn ranks high among the dwarf *Prunus*, both from the beauty of its pure white flowers and the freedom with which they are produced. It does not grow nearly so tall as the type, but makes a dense bush with stiff spur-like branches, upon the whole of which large numbers of flowers are borne. It is at present by no means common, but deserves being taken in hand and increased largely, for besides being useful for the shrubbery it could be used with advantage where cover is needed for game. It can be increased by grafting on stocks of the type.—W. D.

— **MAGNOLIA STELLATA.**—Now that good plants of this species can be imported cheaply and in good condition from Japan, it is fast becoming one of the most popular flowering shrubs, both for outside work and forcing. At Kew several beds are to be seen, which during the Easter holidays were—and for several weeks to come will be—perfect pictures, the bushes being completely smothered with sweetly scented, glistening white, star-shaped blossoms. An idea of its free-flowering qualities may be gathered from the fact that some of the plants, 3 feet high by 3 feet wide, are carrying 150 open flowers and buds. When planting it is advisable to prepare beds of half peat and half loam, for although it will grow in loam alone, it thrives much better in the mixture. For forcing the plants should be grown in an open border during summer, and lifted in October, potted, and plunged outside until required. Strong heat should be avoided when forcing, the flowers opening and lasting better when gentle heat only is used.—D., *Kew*.

— **READING GARDENERS' SOCIETY.**—One of the most interesting and successful meetings of the Association was that held on Monday last, when the prizes offered by Mr. Leonard Sutton at the commencement of the season, 1898, for the best essays on "How to Keep the Greenhouse Gay from October 1st to March 31st," and "How to Crop the Vegetable Garden to Insure the Best Varieties of Vegetables from October 1st to March 31st," were awarded to the successful competitors. The interest taken in the competition was greater than anticipated, thirteen members sending in papers, and a good gathering of members assembled to learn the result and to hear the prizewinning papers read by the writers. After the formal business had been transacted Mr. C. B. Stevens announced the awards as follows:—"How to Keep a Greenhouse Gay": First, Mr. A. W. Blake, foreman, The Gardens, East Thorpe, Reading; second, Mr. G. Stanton, The Gardens, Park Place, Henley-on-Thames; and third, Mr. John Botley, foreman, The Gardens, Warfield Hall, Bracknell (a contributor to the "Young Gardeners' Domain"). "How to Crop the Vegetable Garden": First, Mr. E. Trollope, The Gardens, Coombe Lodge, Whitechurch; second, Mr. H. Wilson, The Gardens, Lower Redlands, Reading; and third, Mr. G. Hinton, The Gardens, Sherwood Lodge, Reading. Mr. L. Sutton, in presenting the prizes, said that he considered the subject of essay writing was one of the most useful and beneficial to the members that the Society could take up, for it encouraged the putting of one's ideas on paper, and at the present time it was those gardeners who could go to their employers with well thought out ideas who would prove successful; it would also be of the utmost value to the young gardeners who entered these competitions, for they would reap the benefit of their study and research in after life. The President then called upon the various winners to read their papers, and they created great interest. A vote of thanks was passed to Mr. L. Sutton for his kindness in giving the prizes. Owing to the success of the venture the Association has decided to take up this interesting subject as a part of its programme for season 1898-99, and a vote was passed that a sum not exceeding £8 should be devoted for the purpose, but that the competition should be divided into various grades, thus giving all members an equal chance to compete. Cut flowers were staged by Mr. Woolford, The Gardens, East Thorpe; *Prunus sinensis flore-pleno* by Mr. Swansborough, Warfield Hall Gardens; and vegetables by Mr. Stone and Mr. Hinton.

— **FRENCH AND AFRICAN MARIGOLDS.**—It is better to have dwarf and stocky young plants of these by sowing now thinly in boxes, than to use tall overgrown plants, which invariably result when the seed is sown too early. Plants from early raising need transplanting, but when sown thinly and at a comparatively late period this is not necessary.—S.

— **PROPAGATING ECHEVERIA METALLICA.**—When plants of *Echeveria metallica* become tall, and a greater part of the stem bare of leaves, it is a good plan to cut off the tops just below the healthy leaves, and make of them dwarf plants. Two inches of stem may be left, and if the heads are placed in empty pots, with the lower leaves resting on the rims, the stems will emit roots. Let the pots stand on the stage among others in an ordinary greenhouse until abundance of fine roots have developed, then the heads may be potted in sandy soil in the ordinary way.—E. D. S.

— **METROPOLITAN PUBLIC GARDENS ASSOCIATION.**—At the monthly meeting of the Metropolitan Public Gardens Association, 83, Lancaster Gate, W., Sir William Vincent, Bart., Vice-Chairman, presiding, it was announced that the Inner Temple Buildings Bill, in which powers were sought to build on the frontage adjoining the Thames Embankment, had been rejected by the Select Committee of the House of Lords. It was agreed, if its maintenance were secured, and if funds were forthcoming, to lay out the churchyard of St. Mary, Plaistow, E., at a cost of £300. It was also reported that progress had been made in the laying out of several grounds, and it was stated that Charles Square, Hoxton, had been commenced, and that trees had been planted in the new riverside ground at Putney. Ham Common, and Lammas Lands, Bridgewater Square, the "Postmen's Park," Pymme's Park, Edmonton, and some vacant land at New Cross, also received attention.

— **CARE OF TREES.**—It is gratifying to note, says a transatlantic contemporary, the rapidly growing sentiment in regard to the care of trees. The following from the Taunton, Mass., "Gazette" has the true ring:—"The practice in vogue during the past ten years of ruthlessly hacking down any tree, no matter of how magnificent proportions, in order to make room for an unarchitectural building of some kind is being frowned upon owing to the increased appreciativeness of shade and scenery. It takes a tree a long while to grow. After it is full-grown it is a valuable piece of property. It cools the earth in its vicinity, it aids in keeping the atmosphere pure, it attracts the birds and throws a faint suspicion of country joys about the bit of noisy city in which it is located. Leave a street which is bare of trees and come to one which has one or two stately Elms upon it and note how sensible is the change. It speaks well for the general advance in culture among the people that this movement is being made, and it should increase not only so far as it relates to preserving the trees already planted, but in urging the planting of more that they may grow and add their benefits to the next generation. It is well to remind our young people that shade trees should have greater respect paid to them."

— **PREVENTING THE GOOSEBERRY MILDEW.**—Mr. C. P. Close says:—"For ten years the New York Agricultural Experiment Station has advocated potassium sulphide as the best remedy for Gooseberry mildew. In the season of 1897, potassium sulphide, Bordeaux mixture, lysol, and formalin were tested side by side. The plantation was divided into six sections. In two of these the spraying was begun very early, just as buds were breaking; in two others eleven days later; and in the remaining two sections twelve days after the preceding two sections. The first mildew appeared May 26th. By June 7th portions of the plantation were badly mildewed. At this date the lysol and formalin seemed to have done no good. Bordeaux mixture was more effective, but not so good as potassium sulphide where the treatments were begun very early and medium early. All of the fruit was picked July 6th and 7th, so as to market it green. Bushes sprayed very early with potassium sulphide at the rate of 1 oz. to 3 gallons of water gave only 5 per cent. of mildewed fruit; those sprayed very early with it at the rate of 1 oz. to 2 gallons of water gave 6.6 per cent. Bushes sprayed very early with lysol, 1 oz. to 1 gallon of water, gave 24.5 per cent., and those sprayed very early with Bordeaux mixture gave 37.4 per cent. of mildewed fruit, while the untreated bushes gave 57.7 per cent. to 78.7 per cent. The foliage was not injured by any of the fungicides. At 18 cents per pound for potassium sulphide, the cost of the solution which gave the best results is about one-fifth of one cent per bush for the seven sprayings. The station recommends potassium sulphide, 1 oz. to 3 gallons, or 1 oz. to 2 gallons of water, as the most effective fungicide for Gooseberry mildew. As a rule, only the English varieties and their seedlings are attacked by mildew although the American varieties are not always exempt."

— **WAR AND THE FRUIT TRADE.**—A large fruit importer says : "A war between America and Spain will paralyse the fruit trade of this country. That is the unanimous opinion of merchants. There are about eight lines of steamers engaged in the fruit trade, and most of the imports are direct from Spain to Liverpool. Even the London market is supplied mostly through Liverpool."

— **SELAGINELLA KRAUSSIANA.**—When grown in pots and pans the whole of the stock ought to be divided and repotted in clean receptacles and fresh soil at this season. Any clean young bit will grow, but the readiest method is to divide a vigorous clump into small pieces, planting one piece in the centre of each pot, or if in pans several will be necessary to cover the surface. They quickly take root and spread. Stand the pots in a shady position in a vinery, greenhouse, or stove, sprinkling lightly with a syringe daily until established.—E.

— **GROWING PLANTS IN SCHOOL ROOMS.**—The Assistant Medical Inspector of the Philadelphia Board of Health says :—"Growing plants should not be used as permanent school-room decorations ; many have medicinal odours to which some children are quite susceptible, and they may serve to harbour disease germs in the dust that may accumulate about them." Only for the statement that there are "many" such kinds, one might suppose people grow poison Vines for window plants. As plants absorb the carbonic acid from the children's lungs, they are Nature's great purifier of bad air. It would have been as well if the learned gentleman had given a list of those that possess "medicinal" odours susceptible (of disease) to some children ; and why the dust on a live leaf should harbour disease germs more than the walls or permanent furniture, the tops of which are seldom dusted, might be clearer. Unfortunately, local Boards of Health are usually held as sacred as the oracles of the pagans ; and the beautiful window flowers, for which so many of the public schools are famous, will probably have to go. The pretty little conservatories attached to many city homes may next be banished, and the dust-collecting, disease-germ-harboursing shrubbery in the city yards share the same fate !—("Meehans' Monthly.")

ROUND OAK GARDENS.

LOOKING through the gardens of N. L. Cohen, Esq., Round Oak, Egham, I noticed in one of the houses a good sized tree, some ten or twelve years old, of Alexander Peach, carrying an abundant crop of fruit. Mr. Sturt, the gardener, told me that he never had trouble with the variety in bud-dropping, which is so commonly complained of. I noticed that the growth on the tree bore in no sense a luxuriant aspect, and learned that such appearance was due to occasional root-pruning, as check in that way administered in repressing robust growth had the effect of checking bud-dropping. It would be interesting to learn whether others have adopted this repressive course with the variety with similar results, or otherwise. In many cases, as common observation shows, there is too much of haste to furnish a Peach house, and thus too robust growth is engendered.

Beside one of the paths in the kitchen garden there run on each side broad borders full of very strong plants of good Hybrid Perpetual Roses. I have never seen Rose bushes cut back so completely as these were, when I saw them a few days since. The stools are 2½ feet apart, and many of them close to the soil, to which they were close cut back, were 9 and 10 inches across. They are treated in this way every year, with the result that as the spring advances up come grand shoots, chiefly from the bases of the previous season's wood, to heights of from 3 to 4 feet, and carrying superb blooms. Presently the plants receive a good mulching of manure, and if needed liberal waterings. It is interesting thus to note this very drastic style of pruning Roses, whilst some people hardly prune at all, or they do so very tenderly. Roses evidently naturally like to recuperate as they do at Egham.

When Mr. Sturt went to Egham, some fifteen years ago, he found a couple of old and almost exhausted Asparagus beds. Most gardeners would probably have condemned them to early destruction, or at least so soon as new beds could be induced to take their places. Not so this gardener. He started to renovate by removing entirely much of the top soil, replacing it with fresh, and here and there filling vacancies with new roots. Then a good dressing of manure also was added, and summer feeding liberally given. The result has for a long time been seen in entire resuscitation. The soil on the beds is higher, for before it had become quite thin ; the summer growth is double the density and height of what it used to be, and both beds give splendid crops of stems. This illustration of remedial measures in relation to Asparagus culture is worth notice.

I have one other note from Round Oak. "I see you have some ridge Mushroom beds," I remarked. "Come and look at them," said Mr. Sturt. He then from one lifted the light canvas cloth thrown over it, drew away the covering of litter, and revealed such clusters of fine clean brown Mushrooms as are not commonly seen ; yet he had been cutting from this bed since January, when there was a good crop, then the bed

had a rest, and started bearing again. "My people," said he, "prefer Mushrooms from outdoor beds to those grown inside, as having firmer flesh and richer flavour. I have had beds frozen-in several inches, yet when mild weather has come they have started bearing again." Mr. Sturt's sample was just of that fine solid character as were the Mushrooms Mr. J. Miller sent up from Ruxley Lodge to the Drill Hall on the 12th inst.—A. D.

TEN MINUTES' NOTES.

I AGAIN subscribe a trio of notes appertaining to fruit and fruit prospects, together with a reference to the current mode of stopping Vine growths, with a set off against this hard and fast rule, and invite other opinions on the subject. I also append a note on flavour prizes for fruit.

PLETHORA OF FRUIT BLOSSOMS.

Many persons who are not experienced cultivators will be rejoicing in the splendid lot of blossom on their trees, and congratulating each other on the bountiful crops of fruit of which they feel certain. I, for one, would rather see a fifth part of the bloom instead of such a dense crowd. Certainly blossom-laden trees have a charming appearance, but the superabundance now opening on Pears, Plums, and Cherries will be so weakened from want of nourishment, that a great percentage must fall and leave no fruit behind. What, then, is to be done to secure if possible a fair crop of fruit ? It is, of course, out of all reason to thin out the fruit spurs, and it is equally impossible to reduce the blossoms on any large scale, so as to throw more productive power into those left. There is but one way that appears to me to be practicable in this very dry season that might tend to lessen the chances of disappointment, and that is to well water all the trees where it is possible, especially wall trees. The soil must be unusually dry for the time of year, and if there are conveniences whereby all the trees may be copiously watered with a minimum of labour expended, it will be work well done. A good mulching of half-decayed manure around each tree afterwards will tend to check evaporation. I feel sure that such an excess of blossom associated with the present dry state of the soil will account for many blanks later on, if some such measure as suggested is not acted upon to assist Nature in her over-bountiful supply in one direction, and a deficiency of moisture on the other.

STOPPING VINES.

Gardeners generally have been so tutored into the orthodox system during their early career of stopping Vine shoots two joints beyond the bunch, that it is hard to discontinue the practice, and launch out from what I am led to think seems wrong teaching, and contrary to the laws of Nature. It seems to me that the practice of stopping all shoots in the same way needs a little rectification. I know several good Grape growers who allow much more than the orthodox extension, especially with Madresfield Court, to counteract any sudden rush of sap, that would otherwise burst the berries. In a house of Hamburgs one expects shoots in various degrees of vigour. Frequently a strong shoot will be bunchless, while a weaker, perhaps on the same spur, will show two bunches. Both laterals are needed to furnish their allotted space. What about stopping such as these ? I should certainly check the former at the third or fourth leaf, and allow the fruiting branch more freedom by running it on for a week or two longer, then stopping at the third or fourth leaf from the bunch. The same principle adopted throughout the house of stopping the strong shoots closely, and allowing the weaker ones to have the run of sap, must tend to equalisation. It is not always the strongest shoots, far from it, that produce the best results. I have a Golden Champion Vine that broke very strongly, but I can only count five or six bunches on it. Near by is a one-year-old cane of Muscat of Alexandria, showing bunches all its length. I believe Mrs. Pince is the better for a liberal shoot extension. I am of opinion that a little deviation in practice, exercised with proper judgment, is desirable in the mode of stopping Vines.

FLAVOUR PRIZES (R.H.S.).

I do not know, but I should imagine that a great percentage of gardeners are not aware of the rules and regulations enabling one to enter into competition for the excellent prizes given by Messrs. Veitch and Sons for the best dishes of Pears and Apples, the test to be flavour, the "testers" the Fruit Committee of the R.H.S. The same exhibitors' names have appeared time after time (all credit to them), that a stranger does not seem to have had a look in. Why do not more gardeners enter the arena and make the contest keener, and more what it was intended to be—an "object" lesson, or a thorough test of the merits or demerits of our English grown fruit ? It would stimulate our backward friends who have excellent fruit walls and quarters to action, if the Editor would again publish the rules and conditions, and at the same time express an opinion of the value of these contests. Any hints would be highly appreciated that would tend to make the competitions keener. I feel sure the promoters of these money prizes would be gratified to find a few more zealous cultivators taking part in what appears to be a disappointingly weak (in numbers) competition.—GEO. DYKE, *Stubton Gardens, Newark.*

[It is too late now to republish the conditions referred to. The season is practically over. If prizes of the same nature are offered in the autumn we shall readily make the particulars known. Possibly if our able correspondent had been one of the "testers" at several of the meetings he would not have found the competition so "weak" as he infers. It was often quite strong enough for the palates of the adjudicators, which seemed ready for a rest after the work was done.]

ALLAMANDAS AND THEIR CULTURE.

(Concluded from page 320.)

WATERING.

IN the winter months Allamandas require little water—indeed, the less the better provided the wood is kept sound and plump and the leaves present do not flag. Understand that the soil must accord—that is, appear and be apparently dry, for a plant may not want water because the soil has become sodden through defective drainage. That must never happen, for thorough drainage is essential. In the early stages of growth water must be given sparingly; suffice that the soil be evenly moist, inclining to the dry rather than wet side, for roots are wanted, and also a sturdy, thoroughly solidified growth. As the plants make growth increase the water, never giving any until the soil is getting dry; then a full supply to moisten the ball right through, and always afford it before the foliage is distressed for lack of due moisture.

Feeding may begin as soon as the flower buds form, or even before. I have found nothing better than stable and cow house drainings, or the liquid from a manure heap. The latter is the better of the two, and the former improved by a peck of fowl manure to each 30 gallons; or better still, half a peck each of fowl excreta and soot, adding a pound of superphosphate (37 per cent. soluble phosphate of lime). This beats all the liquid manures of which I have cognisance, diluted with five times the bulk of water. It must be of the same temperature as that of the structure in which the plants are growing. Once or twice a week is often enough to supply it, unless the plants are in small pots for the size of their spread of heads. These highly fed plants, however, as before stated, sometimes collapse suddenly.

For top-dressing nothing supersedes dried blood mixed with 5 per cent. of freshly slaked best chalk lime, and as much dried wood ashes as can be worked in (a very difficult process, but easier with the lime, and easier still if the warm blood be stirred until cold) to the consistency of stiff crumbling mortar. This covered with gypsum or best air-slaked chalk lime, and left till dry, suits almost anything, a handful being used per square yard. Vines like it immensely, so do Allamandas grown in borders, also those in pots for a change with the liquid manure. The ceasing from growth and flowering will indicate the time to lessen the supplies of water, reducing gradually, not suddenly, as the maturity of the wood must be complete to provide for the following year's flowering.

PRUNING.

The plants must be pruned annually in January or February. Extending plants on the long-rod system—that is, leaving the strong well matured shoots several joints in length, mainly to get the coming shoots well placed for covering a roof trellis, otherwise this long pruning cannot be advised. The best results follow close pruning, cutting the previous year's shoots back to a joint or two of the old wood. This answers admirably, and points to the wood never being too hard or well ripened for the production of floriferous growths.

TEMPERATURE.

Though this fine genus of plants may be said to rest (and they do, in spite of the hair-splitters) from late summer to over New Year's Day, concentrating, it may be, their forces for future developments, they should never be subjected to a lower temperature than 55°. This occurs very seldom in the stove, the night heat and on dull days during the winter being kept at 60° to 65°, so that the plants get exactly what they require—a resting and concentrating of power season. In summer, or from mid-February onward, stove heat by day runs 70° to 75°, in spite of wind or anything else in the shape of weather, and when the sun shines the heat rises to 80°, 85°, 90°, or more, this just suiting the plants, only give air, so that the glass is not clouded with moisture to obstruct the light and absorb the heat. Then the sun's rays strike right into the Allamanda foliage, the chlorophyll granules increase, the leaves become the deepest green, followed under good management by the richest of yellow flowers.

ATMOSPHERIC MOISTURE.

The Allamandas are remarkably clean plants, neither fungoid (unless sudden collapse have that agency) nor insect pests troubling them, and they do not in consequence require the washing some stove kinds must have to keep them clean and healthy. The usual sprinkling of the paths and other surfaces two or three times a day meets all their requirements in respect of air moisture. Though an occasional light syringing may be indulged in, an everyday washing does Allamandas more harm than good, and is much better left undone. Indeed, *A. grandiflora* marks its dislike of water hanging on the leaves by these turning brown at the tips and edges, which are a great disfigurement, often spoiling the appearance of an otherwise good specimen. Other species also become more or less browned by the

needless drenching procedure; therefore avoid it, for good foliage, as well as flowers, are important considerations in either potted or planted-out specimens.

SELECTION OF VARIETIES.

A. Aubleti.—Flowers yellow; large. June. Leaves four to five in a whorl, broad-oblong, acuminate, rather hairy beneath. Guiana, 1848. A rather uncommon species, but fine for trellis training.

A. cathartica.—Flowers yellow. June. Leaves four in a whorl, glabrous. Guiana, 1785. Excellent for planting in a border and training up the roof of a house, but flowers neither so freely produced nor so large as some other species or varieties, yet distinct and desirable, being relatively hardier than most others.

A. Chelsoni.—Flowers yellow; large. Summer. A garden hybrid, very free, producing its yellow blooms all through the summer. Stiff and hard in the wood, this splendid plant does not readily admit of trellis training; but for the roof of a house has few equals, the flowers having (for an Allamanda) considerable persistence, hence one of the best kinds for cutting.

A. grandiflora.—Flowers pale yellow, distinct. June, Brazil, 1844. A slender-growing plant; very free bloomer, and excellent for formal trellis training. It does not succeed well on its own roots, and hence is commonly worked on a freer and hardier stock.

A. Hendersoni.—Flowers deep yellow; large. Summer. Garden hybrid. A very free grower and bloomer; excellent for the roof of a house either planted in a border or grown in pots. One of the best for cutting, but the plants (with me) liable to collapse suddenly, especially after great floriferousness and high feeding when grown in pots, this taking place about August. Can any correspondent account for such collapse?

A. neriifolia.—Flowers deep golden yellow, streaked with orange, rather small for an Allamanda, between funnel and bell-shaped; tube wide, panicle many-flowered. June—indeed, almost the year round when growths are regulated by cutting some back. Leaves oblong, on short petioles. South America, 1847. Shrub erect, glabrous; 3 to 4 feet. The hardiest species, succeeding in a cool stove.

A. nobilis.—Flowers bright pale yellow, deeper tinted in the throat, fine circular form; large. July. Leaves in whorls of three or four, sessile, oblong, hairy, especially beneath and on the midrib. A strong-growing species, and certainly one of the best of the genus, giving a long succession of bloom. Brazil, 1867.

A. Schottii.—Flowers yellow, throat beautifully striped with rich brown; large. August and September. Leaves four in a whorl, oblong, glabrous. Brazil, 1847. A very free blooming species, strong grower, yet suitable for trellis training, but for floral production best grown on the roof system.

A. verticillata.—Flowers yellow; large. June. Leaves six in a whorl, glabrous. South America, 1812.

A. Wardleana.—Flowers yellow; large. Summer. A desirable climbing variety, suitable for trellis or roof training. For all practical purposes the same as Wardleyana.

A. Williamsi.—Flowers very bright yellow, and of medium size. Habit compact and bushy. A good variety for culture in pots. Probably a garden hybrid. (See illustration, fig. 67.)—G. ABBEY.

TYING DOWN VINE SHOOTS.

VINE shoots in midseason houses are now growing apace, and those in late ones are advancing rapidly, and in either case unless the work of tying down the young shoots is carefully performed, the loss of many a promising bunch is inevitable. Fortunately there is a tendency now to fix the trellises farther from the glass than formerly, and those who have departed from the "beaten track" in this respect soon perceive how great are the advantages of such a practice. In summertime it is much easier to keep the Vines free from red spider, and during the early stages of growth the shoots need not be interfered with until the dangerous stage is passed. After the fruit is set the shoots possess a certain amount of toughness, and are less likely to break off at the heel.

Taking these things into consideration, common sense suggests that in all instances where there is a space of 18 inches between the trellis and the glass, the shoots should be stopped, but no attempt made to tie them down till after the fruit is set. There are many cultivators, however, who have to deal with Vine rods trained only a foot from the glass. Where the houses have sufficient height matters may be improved by lowering the rods a few inches below the trellis, but in many cases this way out of the difficulty cannot be pursued because the houses are too low. The difficulty can then only be met by stopping at one or two joints beyond the bunch, and using every possible care in tying down, as well as by delaying the latter operation as long as possible. I have lately had to deal with a house of this description, and as on many former occasions I have met with

difficulties, I thought, therefore, that a few remarks on the subject might be of service to readers of the *Journal of Horticulture*.

An important point to remember is that the tying down is best performed in the early morning and evening, as the shoots are then stiff and upright, whereas during a bright day they are limp. If tied down in that state there is great danger of losing many shoots,

noted closely will show practical cultivators what great advantages they may gain by performing the operation of tying down Vine shoots at the most suitable period of the day, or rather during the most suitable weather.

Even when these precautions are taken it is not safe to tie down the shoots of some varieties very early. Black Hamburgs when

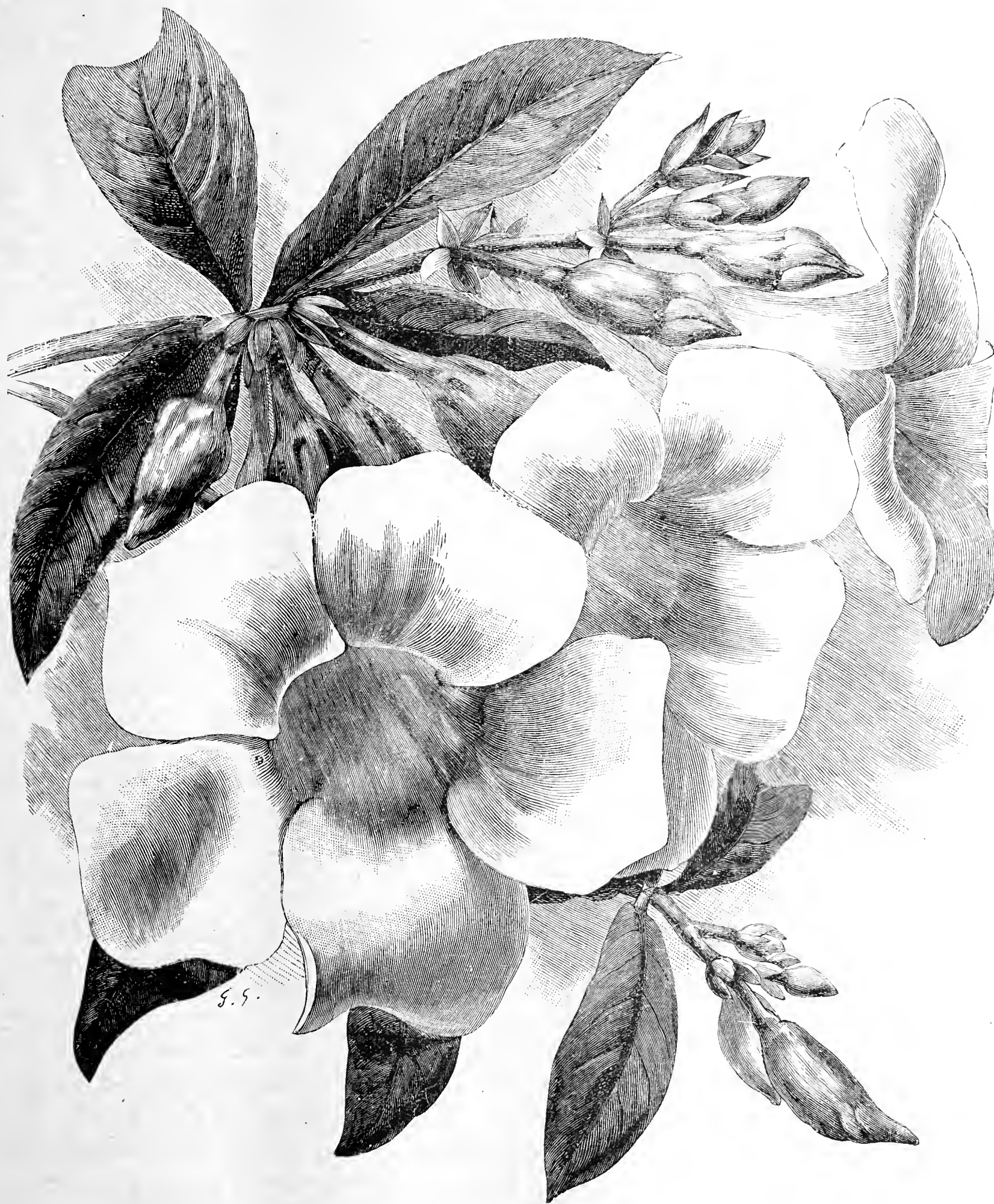


FIG. 67.—ALLAMANDA WILLIAMSII.

because when the leaves freshen and stiffen during the evening the tying material is drawn tightly, with the inevitable result that many shoots break away at the heel.

Now let us examine the opposite state of affairs—viz., the results of tying down while the weather is dull. The shoots are then fresh and rigid, and no tightening of the tying material takes place; but, on the contrary, it gets looser as the leaves become limp under the influence of bright sunshine. These apparently trivial matters if

forced early are very brittle in growth. Gros Maroc and Black Alicante may also be included among varieties which require great care. A plan I often adopt in dealing with them is, when the shoots touch the glass, to merely tie the point down slightly, without attempting to put any pressure upon the lower part of the shoot; by doing this the terminal leaf may be kept safe from being scorched until the shoots become sufficiently hardened to be tied down in the usual way.

The loss of a spur so spoils the appearance of a Vine, that every precaution should be taken to avoid its occurrence. At disbudding time I make a practice of leaving an extra shoot upon any spur which seems likely to give trouble; and in other instances, where the spurs are old and long, if two shoots are formed upon them, I stop one back to the lower bud, then if the principal shoot happens to get broken the stopped one will send out a strong lateral, and thus avoid an ugly gap on the Vine rod.—VITIS.

PROFITABLE FRUIT GROWING.

THERE is excellent sense in the paper appearing on page 322 of your last week's issue, and I quite anticipate its continuation. However, some curious misconceptions crop up on such occasions, an instance in point of which is the remark, "We have to face competition from every quarter of the globe." This is not correct in a literal sense, for we have only to face real competition in numerous and important products of these isles from countries north of the Equator. The products of the southern half are to the largest extent a welcome supplement to our own supplies when off.

I well remember my surprise when, a couple of years ago, on the occasion of a meeting in connection with the R.H.S. fruit show, a discussion was reported. An Australian cousin was present, and stated a few points of view concerning Apples, when he was somewhat unceremoniously rebuked by a home grower, who told him in so many words we would be rather without Australian competition. Shortsightedness alone was responsible for the unfriendly greeting of the Australian visitor, for it is manifest that when in April and May the Antipodean supplies of Apples reach us there is scarcely an Apple of English growth to be had. On the other hand, the Australians will have to improve the flavour of their Apples if they wish to be successful, for only that element will dispose of the larger quantities when in due time they will be produced.

A dream of the future may be indulged in. When the cousins at the Antipodes have prospered, and formed more populous communities, there may be a huge trade arising by exchange of seasonable fruit between the northern and southern branches of our future federated empire.—H. H. R., *Forest Hill*.

NOTES ON ASPARAGUS.

IF well attended to in spring this favourite and valuable vegetable will require little attention throughout the season. It is a great advantage for cultivators to raise their own young stock, as Asparagus roots suffer much through being taken up, sent a long distance, and kept out of the soil for a considerable time. Many roots will die from this treatment, and more still will receive a check from which they will not readily recover. When everyone raises his own plants this difficulty has not to be contended with, as the ground may be ready for the plants before they are taken up, and then they need not be out of the soil or exposed to the air for more than a few minutes. In this way they will experience no check from being transplanted, and the advantage of one or two years' growth will be gained. Two or three hundred plants may be raised in a bed 4 feet wide and 10 or 12 yards long. April is the most suitable month to sow the seed, and it may be dealt with like Onions or any other ordinary crop.

Transplanting the young roots into their permanent quarters is an operation of the greatest importance, as on this depends their ultimate success. Soil for Asparagus should always be thoroughly drained. When wet and retentive many roots perish every winter, and the plants are never satisfactory. Light manures, such as horse droppings and gritty road scrapings, suit Asparagus best. The heavier the soil the more of this should be applied, and river or sea sand added in proportions according to the natural condition of the soil will be found to answer admirably. Wood ashes are good, but coal ashes are worse than useless. They may be placed in the bottom as drainage, but amongst the roots they are injurious.

Asparagus roots do not run deeply, but live and feed near the surface, and this should be remembered in making the soil ready. Trenching and deep digging are beneficial in helping to improve and drain the surface, but to manure a piece 2 feet deep or more is a mistake. Enrich the surface by all means and make it as good as possible. Fork or dig large quantities of nourishing manure into it immediately before planting, and the results will invariably be satisfactory.

The time of planting must be determined by the condition of the roots. It is not any advantage to plant long before growth begins, and it is injurious to lift and plant after growth has fully started. The best time is when the stems are commencing growth. In some parts of the country this may be about the end of February, and in others not until April. Recently in looking over some young roots I found them just starting into growth, and they were transplanted on the same day.

Asparagus beds are now almost out of date, except in very wet or water-logged situations. The most profitable way is to plant row after row on a piece of ground and never trouble about beds. The roots should be planted from 2 to 3 feet apart each way, and only 3 or 4 inches below the surface. Roots from one to two years old will be about 1 foot in diameter. The holes must not be less than this, and when placed in them none of the roots should curl up. Lay them flat and put two or three handfuls of sand over each, then finish off with the soil which was taken out. Make this quite firm over the roots, and planting is finished.

Older roots which have been planted some years are always benefited by top-dressing in winter and spring. A good handful of salt, guano, or a mixture of both may be shaken over each crown at present with advantage to what is coming in the way of heads. Forking amongst the roots should never be allowed. If the crowns have been mulched throughout the winter this covering may be taken off, placed between the rows and forked in, but to try and work this amongst the roots would end in breaking many of them, and probably injure several of the crowns. Old plantations which have long since seen their best days should not be preserved. They are the reverse of profitable. Cut them to the last this year and then destroy them.

Owners of young plantations are often puzzled as to when to begin to cut Asparagus. Must it be two, three, or four years old? My plan is to cut as soon as the "grass" produced is strong enough to use. Two-year-old plants will sometimes throw up heads which are cut without fear, but poor roots badly managed would show nothing worth having for a long time. Leaving the weak and cutting the strong is a good method. Were they all left the strong would remain so throughout, and the small ones would never come to anything. By cutting and using the finest the small growths are forced to develop, and so a crop is obtained, and the plantation is constantly improving.—J.

GLEANINGS FROM GHENT.

HOW THE BELGIANS BEAT US, AND HOW WE BEAT THEM.

QUINQUENNIALS are not a popular form of function in a country in a hurry. Great Britain is a country in a hurry—*ergo*, her exhibitions come at short intervals, and, big or little, they are very soon forgotten. That perhaps is why, in the rare moments of self-depreciation which the assertive Saxon permits himself, he says that they do things better in France. Perhaps they do; but it should be recognised at the very beginning that they likewise take a good deal more time about it, and perhaps if we packed five Temple Shows into one field, we should make as big an effect with it in our rough and ready way, as some of our Continental friends do with their admittedly fine displays. Having thus put matters on a proper basis, I can proceed to give a few jottings (which will perhaps not follow any stilted type) about the latest Ghent quinquennial. I shall make no more qualifications than the one which I have just quoted, but I shall make as many comparisons as struck me, whether they tickle or thwack us, for of such is the Law of Justice.

I did not meet the Man from Bedfordshire at Ghent, but I met him, as is appropriate, on the boat. Perhaps, not sharing my own particular partiality for Robt. Louis Stevenson, you do not know who the Man from Bedfordshire is. He is the man who is going on the sea for the first time, but who, on the strength of the fact that Britannia rules the waves, expresses unmitigated contempt for every other nationality as soon as he gets afloat. He then proceeds to criticise the boat (no small presumption in the case of the Great Eastern Company, which has most comfortable and admirably fitted vessels) and the captain's knowledge of maritime matters, after which he abruptly retires to be seasick. This culminating stage rid me of the man from Bedfordshire, but men of a few other counties came later on into view. There was, for instance, a man from Kent, in the substantial person of Mr. Laing; a man from Buckinghamshire, in the jovial form of Mr. H. Turner; several men from Middlesex, the nursery-element in the metropolitan county being represented by Mr. Jas. Veitch, Mr. H. Williams, and Mr. Cutbush; and the literary by Dr. Masters, Mr. Hudson, and Mr. O'Brien. From Lancashire came Mr. Ker, from Surrey Mr. G. Gordon, and Kent had other representatives in Mr. Cannell, jun., and Mr. H. J. Jones. Professor Bayley Balfour, and Mr. F. W. Moore were the Scottish and Irish delegates.

To begin with a little wholesome flagellation, it may be said that as a whole we have to cry *Peccavi* on at least three grounds. No. 1 is display; No. 2, Ferns and Palms; No. 3, Azaleas. We used to have some Azaleas in the old days a little like the giants of Mr. G. De Walle, but they are not seen now. As to arrangement, we are miles behind the Continentals. We try to put our classes together; they try all they can to put them apart. They consider the people who pay—to wit, the visitors; we consider those who don't—*i.e.*, the exhibitors and the reporters. The Continental system is bad for jury and journalists, but good for everybody else. Which is generally preferable depends on whether you are a payer or a worker. Being both myself, I was never exactly right and never exactly wrong. One thing, however, must be said—neither we in our inferior way, nor the Belgians in their superior one, touched the high-water mark of Hamburg's opening show last year. But that was phenomenal. Discounting all comparisons, however, the taste displayed in the disposal of the plants at Ghent was of an order familiar only to those who have previously seen how much better they do this sort of thing than it is done in England.

One thing which, if surprising, was nevertheless unmistakeable, was the eager interest displayed in the Orchids. The Belgians appear to have found out suddenly that Orchids not only exist, but are worth looking at. Old stagers remarked that the Orchids were not so good as at the last quinquennial, but that they were run after fifty times as much. People talked Orchids in the train and in the street, and directly they got

into the Casino they began to run. In view of their excitement imagination fails to grasp the effect which a really great display, such as the Temple, for instance, would have had upon them. It would be too much to say that the Orchids were poor, but as regards both interest and beauty several Ghents would not have made one Temple. The fact is Belgium is beginning where we left off. This is not insular pride, though it may sound like it. It is the truth.

A splendidly bloomed piece of *Odontoglossum Halli*, exhibited by Mr. Stevens, gardener to W. Thompson, Esq., Walton Grange, Stone, received attention and a medal. He had a very attractive little group, including *O. crispum Thompsoniae*, *O. Coradinei expansum*, *O. Humeanum splendens*, *O. crispum roseum leucoglossum*, and *O. Wilckeanum nobilior*. In the competitive classes Mr. A. Van Imschoot was the most successful, his collection including as it did *Cypripedium Chamberlainianum*, *Odontoglossum cariniferum*, *Dendrobium Kingianum*, *Odontoglossum Andersoni*, *O. odoratum*, and *Cypripedium Rothschildianum*, all in good condition. Mr. A. A. Peeters, St. Gilles, Brussels, had a bright display, including *Miltonia Bleuana nobilior* and *aurea*, *Zygopetalum Perrenoudi*, *Cattleya Mossiae Reineckiana*, *C. Lawrenceana*, *Odontoglossum crispum punctatum*, *Laelio-Cattleya Hippolyta*, *Cattleya Parthenia gratissima*, *C. intermedia Parthenia*, *Eulophiella Elisabethæ*, and *Mesospinidium vulcanicum*. There were several items of interest in the gold medal collection of Mr. G. Vincke-Dujardin, including *Lycaste Skinneri Augusta*, rich rose; *Odontoglossum crispum excellens*, lemon and brown; *Masdevallia ignea*; *Cypripedium Druryi*, yellow; *Odontoglossum Gabrieli*, lemon, light, with brown bars; *Cypripedium villosum aureum*, *Oncidium macranthum*, *Ansellia africana*, *Epiphronitis Veitchi*, and *Phaius Cooksoni*.

New plants in general drew the special attention of the trade, but in one or two cases that of the public as well. L'Horticulture Internationale (Linden) had a diversified collection, in which were conspicuous *Maranta Funcki*, *Peperomia metallica*, *Caraguata cardinalis*, *Tradescantia delecta* with leaves three or four times the size of *T. zebrina*, and clearly barred, from Peru; *Leea amabilis* var. *splendens*, *Spathiphyllum floribundum*, the Brazilian *Maranta setosa*, *Dichorisandra angustifolia*, *Fittonia gigantea*, *Gunnera manicata*, *Acalypha quadricolor*, *Adiantum lineatum* from Brazil, *Maranta illustris*, *Malpighia ilicifolia*. The last was the plant introduced from Cuba by Mr. J. Linden in 1838. Either from the interesting fact of its being the plant's jubilee, or because of current excitement about the Caribbean island, it attracted a great deal of notice.

In a wing of the large gallery something like a sensation was caused by the group of new plants from Messrs. Sander of St. Albans, prominent amongst which was *Acalypha Sanderi* from New Guinea. Its long "tails" of rosy inflorescence were viewed with astonishment and admiration. Louis called Adolphe, and Adolphe excitedly fetched Zélie. Then they nearly talked its tails off. *Acalypha Godseffiana* also received attention, but next to *Acalypha Sanderi*, the huge plant of *Dracæna Sanderiana*, 7 feet high, and the same through, drew the most notice. *Dracæna Godseffiana*, *Anæctochilus Leopoldi*, and *Odontoglossum crispum Roi Leopold*, were all much remarked.

In a general survey of the show a busy reporter must make pickings here and there. To put everything in proper form would be to evolve order in the work of an hour or two out of the chaos of days. It is easiest to dip here and there. England came gallantly to the front with one great flower. The *Amaryllis* from Messrs. Veitch were worthy of their country. One gentleman told another, who was not close enough to see, the size of the variety *Francisca*. The other threw up his hands in horror at such uncalled for mendacity. Then there was a squeezing, a jostling, a dragging forth of measures, and a staggered, *C'est vrai!* The mendacious one had triumphed to the sixteenth of an inch. The bloom was over 11 inches in diameter. Then a priest measured the flower with his umbrella, and wheezed away into a fit of amazed and unctuous laughter. This variety and several others have not bloomed in England. Perfect in shape and grand in colour was *King of the Belgians*. Big, bold and bright were *Euphrasia* and *Owick*. The whole group was a magnificent one, being distinguished not only for wonderful quality, but great variety of colour. The *Veitchian Sarracenias* and *Nepenthes* were nearly as much admired as the *Amaryllis*, and that may be taken as proof enough of their grand quality. Messrs. R. P. Ker & Sons of Liverpool surprised everybody—their friends not the least—with the splendid banks of *Amaryllis* they put up, which did further credit to the horticulture of England. It was quite evident that to most of the visitors our contributions of this plant came as a revelation.

Another speciality from England was found in a large group from Messrs. Cannell & Sons of Swanley, who had a collection of beautiful *Zonals*. Some of them seemed to be much to the taste of the visitors, particularly *Comtesse de Morella*, a vermilion with light centre; *St. Cecilia*, a rich salmon; *Nicholas II.*, deep crimson; *Sir J. Kitson*, a purple of huge size; and *Duchess of Marlboro'*, soft rose. The same firm had a number of blue *Primroses*, very charming, but not apparently so much appreciated as they would be by us. And here it may be noted that in British eyes the show was wanting in one noteworthy respect—hardy border and alpine flowers. The eternal *Azalea* rules the sway.

M. E. Pynaert Van Geert received several honours for his Ferns and foliage plants. Novelty and good culture were both to be noted. He

exhibited some excellent specimens, particularly of *Polypodium aureum*, *Gleichenia Mendeli*, *Adiantum concinnum latum*, *Dennstadtia apiifolia* (a gold medal was awarded to this), *Asplenium laxum pumilum*, *Adiantum tenuissimum*, and *Aralia elegantissima* (silver-gilt medal). We ought to see more of the last named, for it has grace and symmetry, with a colour as effective as *Prunus Pissardi* amongst outdoor trees. The De Smet, Frères, exhibited some magnificent Tree Ferns and Palms, towering specimens, giving the imposing green background for banks of bright colour which the Continentals love. Most of the kinds were old friends, but this remark hardly applies to *Latania borbonica aurea striata*, which gives us yellow variegation, like the well-known *Aspidistra*, though not in reckless profusion. A *Todea barbarea*, 6 feet high and through, attracted a good deal of attention, and also a gold medal. *Zamia Lehmanni glauca*, a very distinct and effective silvery form, carried off a silver medal. We could do with it—the plant—here. Mr. Jules De Cock received a medal for the very handsome *Cibotium princeps*, and so did Mr. A. Michiels for *Dracæna fragrans aurea striata*, a plant of fine habit and rich colour.

It is scarcely necessary to say that there were hosts of *Anthuriums*, but there were not many of the quality of *A. Scherzerianum Souvenir de Louis de Smet*. Perhaps it is as well that the number is few while such names are given; but be that as it may, the variety is a gem, having enormous spathes of wonderful colour. As far as excellence of culture is concerned, perhaps Mr. Warocque carried off the palm. He had a large group of plants, each 3 or 4 feet through, and carrying eighteen to twenty fine spathes each. Mr. A. de Smet had, however, a grand group also. The Comte Kerchové de Denterghem showed *Anthurium Hookeri*, with leaves 5 feet long (special medal). *Caladiums* were not up to Laing size, if they were to Laing colour; Mr. L. Van Houtte had, nevertheless, a beautiful group of them, which would probably have received more attention, being well placed near the entrance, if people had not been falling over each other to get to the Orchids.

Florists' flowers were admirably shown by the well-known Parisian firm of Vilmorin. Their *Cinerarias*, both single and double, were excellent strains, and the plants well grown. Their group was fringed by a line of white *Primula obconica*, profusely flowered, and very attractive. The same firm sent a number of *Calceolarias*, hardly so meritorious in type. The name of Cutbush was known at home and abroad for many things years ago, but not perhaps for *Carnations*. The firm contrived, however, to draw many a rapturous "Tiens!" and "Voilà!" with their Ghent group. The sorts were *Malmaisons* mostly, but included a few other forms. *Hyacinths* and *Tulips* were abundant, but, lacking any special horticultural interest, are passed.

The larger of the two main exhibition buildings was referred to by many as a work of extraordinary art in flower grouping. They could not have seen Hamburg. Beauty there was, but it was of the garish order. For instance, of the eight large floor groups, seven were Indian *Azaleas*, and the eighth *Azalea mollis*. It was a huge sheet of dazzling colour, sadly in want of relief. Perhaps the Committee were oppressed with a tardy sense of repentance as regards the reporters, and gave up their splitting tactics. In justice to them, however, it must be recognised that the *Azalea* is of such vast importance as a trade plant in Belgium that it is bound to have a prominent place. Some of the specimens were really wonderful. There were beautiful banks of specimen and fine-foliage plants along each side of the great building.

The *Azaleas* were worth a paragraph to themselves. The principal group was a circular one. More than one exhibitor had contributed to it, but the honours were divided between the Countess of Kerchove and Mr. de Ghellinck de Walle. Truly marvellous were some of the giants of the latter famous grower. They were half globes, 6, 7, and 8 feet across, beautifully rounded and smothered with bloom. In impressiveness, in rich majesty of effect, they eclipsed everything, but in point of horticultural interest they did not exceed the *mollis* forms shown by Messrs. B. Spae, Pynaert Van Geert, and M. Koster. The latter had a number of *mollis-sinensis* crosses, principally unnamed seedlings, but including (the best sort in his group) the splendid yellow *Anthony Koster*. This is a magnificent *Azalea*, and does high honour to the raiser.

If the mixing system was partially deserted with the floor groups, it recurred with depressing severity on the wings. Thus comments become more than ever of a hotch-potch character. The Countess of Kerchove contributed some Cape and New Holland plants, such as *Diosma cordata*, *Chorozema Lowi*, *Kennedya purpurea*, and *Eriostemon floribundum*. *Choisya ternata*, as a pot standard, was not a whit less beautiful than *Deutzia gracilis* near by. Mr. L. Eckhaute, Mr. E. de Cock, and Mr. Louis van Houtte were of the few exhibitors of *Camellias*, which were not a strong feature, any more than *Clivias*. *Adenandra fragrans*, in the form of a bush a yard across, was as noteworthy as anything amongst the pot plants, unless it be an *Eriostemon*, unblushingly labelled *Acacia linearis*. If someone in this country showed pot Oranges like Mr. Van de Wynckal of Ghent, and Mr. Emile Lossy, they would soon be popular, for the little plants were as compact and full of fruit as a Worcester Pearmain Apple. There were very few *Roses*, and those not of a type we like. They were mostly pot standards. On the other hand, *Rhododendrons* from Mr. Pynaert van Geert, Mr. B. Fortie, Mr. Spae, Mr. van Heddeghem and others were by no means wanting.

There were the usual social functions, or perhaps it would be more correct to say—since, judging by the remarks of those who went, there appeared to be some disappointment on that score—that the first day was not quite what it used to be. However, a garden party at Laeken quite made up for it. Being otherwise engaged I was not of the thousand or so of the king's guests. From beginning to end the Journal representative paid his way, and did none the worse for it. If, therefore, the present report lacks something on the score of official guidance, it can at least claim the impartiality which might be expected from the man in the street, who drops in casually, sees what there is to see, and having said his say about the show, from the point of view of the unprejudiced on-looker, hies him home.—W. PEA.

NOTES ON SALADS.

(Concluded from page 307.)

CELERY is not only an important ingredient in the salad, but an indispensable kitchen garden crop, and worthy of the best attention that can be given to it: but here I do not intend going into exhaustive details of cultivation. I will therefore only allude to those points that are of most consequence. The type of Celery best adapted to our purposes is to be found among the short, or medium and compact-growing sorts. These are well represented by Turner's Incomparable, Seymour's Superb White, Sandringham, Carter's Ivory White, Cole's Red Defiance, Major Clark's Red, and Standard Bearer. Several of these have more or less the peculiarity of making nearly all their leaves of one length, and so have little or no waste about them. The Ivory White just named has this quality in a marked degree, and Standard Bearer is the hardiest of all. These dwarf sorts of Celery admit of being planted much closer together and in shallower trenches, and consequently require less earthing up than the taller and coarser kinds. Sowings may be made from the beginning of March to the end of April: the early ones in gentle heat, and the later or last in the open ground. I have already remarked that the quality of salading depends largely upon its being grown freely from first to last, and with Celery this is a point of first-rate importance. Great care should therefore be taken that the young plants sustain as small a check as possible in the one or two removals involved in cultivation. Given a good variety of Celery, I believe that pithy and stringy stalks and premature bolting may invariably be attributed to defective cultivation. Whether planted in single or double lines, in trenches, or in beds with the rows crosswise, Celery requires plenty of manure under it, and a bountiful supply of water or clear liquid manure during early growth and previous to the commencement of earthing up. The earthing must not be begun too soon, and preparatory to that each plant should have the side growths and a few of the small leaves removed, and be somewhat loosely tied round to keep the earth out of the heart, at the same time pressing the soil rather firmly between the plants. A second earthing will be required a few weeks later on, and when growth has nearly ceased a fine dry day should be taken advantage of to perform the operation finally, again taking care to keep the soil out of the heart of the plant. In the spring of the year the remains of the Celery crop may be dug up, and as much of it as is sound laid in carefully on the north side of a wall where it can be protected if necessary. The operation of removal is a check upon growth, and the shady position still further retards it, and thus the Celery season is considerably prolonged.

Radishes require a generous soil, and in hot weather a somewhat shady position. Wood's Early Frame is a good one to sow in gentle heat among early Carrots and Potatoes in February and March, and there is no nicer Radish than the French Breakfast to sow out of doors from March to the end of August. A sowing or two of Black Spanish made late in August and early in September, where they can have a little protection if necessary, are useful in the winter months. When Radishes are required to be dished up by themselves they look much better if, instead of chopping all the leaves off to one length, two or three of the larger ones are removed entire and the green seed leaves left on.

Chicory and French Dandelion sown in drills about the middle or end of May, or even early in June, are quite invaluable for lifting and forcing in a dark place in the winter time. If sown earlier than the time named, these crops throw up their flower stems during the autumn, and are thereby either quite spoiled, or at least much deteriorated.

Beet, when in good order, exactly fulfils the conditions of a salad plant, as it is not only good for food but pleasant to the eye. It thrives best in a light friable soil that has been well manured for previous crops. A good time to sow is from the end of April to the middle of May. The Beet is a tender plant, and if sown too early is liable to be injured, or even killed, by late spring frosts; it is also subject to run to seed, and thus become useless. Small or medium-sized roots that are free from "forks" are the best, and especial care should be taken at the time of lifting to avoid all cuts, breaks, and bruises, as upon this depends the brilliant colour and fine flavour so highly prized at table. Three good sorts to grow are the Egyptian Turnip-rooted, Pine Apple Short-top, and Nutting's Dwarf Red, and there are others equally good.

Mustard and Cress need but few remarks beyond this, that in their treatment we must diverge a little from the good old rule of "sow thin, and sow often," and instead we must sow thickly, and often, and evenly, on a level surface in shallow boxes during winter and spring, and in summer a shady place out of doors will suit them well. The two crops should always be sown separately, and the seed should be kept dark and moist until germination takes place, which will be a little quicker with

Mustard than with Cress. Rape is sometimes used in this way, but it is altogether inferior in quality to White Mustard.

Corn Salad, or Lamb's Lettuce as it is sometimes called, is a useful and easily managed salad plant. It may be sown at any time in good free soil, either thickly, to be cut in the mass like Mustard and Cress, or thinly, to be utilised when the individual plants are big enough. It may also be pressed into service, if needed, by being sown in shallow boxes and brought on in gentle heat.

Rampion is a salad plant not often seen nowadays, and yet it is easily managed by the timely observance of one or two points of cultivation.



FIG. 68.—NARCISSUS LADY HELEN VINCENT.

Several sowings may be made during the spring and early summer in very fine soil. This is an important point both as regards the seed-sowing and the after growth of the root. The seeds are very small and smooth, and the long white Radish-like root is liable to "fork" if the soil is lumpy. The seed is best sown in very shallow drills, and the crop should be duly thinned and kept free from weeds, and well watered during dry weather. The root is the part eaten, and it should be peeled before being committed to the salad bowl to add its sweet nutty flavour to the rest of the appetising compound.

Watercress may be utilised as a salad plant at any time, its peculiar flavour and aroma being always agreeable. Boxes of any sort or size filled with roots planted in ordinary good soil, and placed in a little heat, or even in a cold frame, and frequently and plentifully doused with clean water, will soon give plenty of Cresses.

A green salad, consisting chiefly of Sorrel, Dandelion, and Burnet, may be procured from our meadows during the summer season, and many such are gathered by the foreign workmen resident amongst us. Burnet is said to give the flavour of Cucumber to a salad, and curiously enough the foreigners seem all to know the plant we call Burnet by the name of "Pimpernel," while we attach exactly the same name to a plant which is botanically and otherwise totally distinct, the one being Poterium Sanguisorba, and the other Anagallis arvensis. The mixing of a salad can hardly fail to be of interest to a gardener, even though he is not called upon to do it, and here, as a rule, his interest in it ceases.—H. F.

ANEMONE APENNINA.—The Apennine Windflower is at present in full flower, its blue, rose, or white blooms being very attractive. Although later than Anemone blanda it is a more reliable plant, and stands rougher treatment. Planted in grass which is left uncut until the leaves of the Windflower have ripened, it is very beautiful, and thrives splendidly. Although sought after by some, the rose and white forms are less effective than the dark blue shades. It has sometimes been sent out from some nurseries in place of A. blanda, but no one who has seen the two can fail to recognise the plants. The sooner A. apennina is procured after the leaves have ripened the better.—S. ARNOTT.

“DAFFODIL LAND.”

SOME readers may imagine from the above title that these notes will deal with Daffodils in Spain and Portugal or in the Isles of Scilly. Such, however, will not be the case. The Daffodil Land of which mention is now about to be made is much nearer home; indeed, it is within a dozen miles of our great metropolis. What need is there now to say that the title is applied to the Long Ditton nurseries of Messrs. Barr & Sons? None at all. It is, indeed, Daffodil land, as all travellers on the S.W.R. main line know so well, for there are millions of bulbs producing more millions of flowers. A glorious spectacle indeed is this. The eye wanders over waving masses of golden Daffodils—some large, some small, but all beautiful as well as useful for the adornment of our gardens and homes during April and May. Who does not admire the “nodding Daffodil?” Everyone, beyond a doubt. Then let all who can visit these grounds at once, and they will still be in time to see thousands of flowers of more than passing beauty. The best station to utilise is Surbiton, whence Daffodil Land is about fifteen minutes’ walk.

Though the head quarters of the firm are in Covent Garden, one of the chiefs, Mr. William Barr, can almost invariably be found at Ditton, and a walk through the nurseries in his company is more than interesting—it is instructive. Familiar with the geography of the Narcissus, he can tell where this variety is found; where another was discovered by his father, Mr. Peter Barr, V.M.H.; and what with the conversation and admiring the many varieties, the time will pass all too quickly. A visitor on a recent day had the temerity to ask how many bulbs there were growing in the nurseries. But much as Mr. “Daffodil” Barr knows of his favourite flowers, this was too much for him, though he ventured to suggest somewhere between 2,000,000 and 3,000,000, adding, “but there are too many to count.” Just so, a great deal too many; and we, with most others, would prefer to see and admire the flowers, rather than commence the task of counting up the bulbs.

As an example of the magnitude of the stock held by the firm it may be noted that in one mass there are upwards of 50,000 bulbs of *Barri conspicuus*, and this does not represent more than half the number of this variety alone. True, it is one of the most popular *Narcissi* in cultivation, but the example is a fair one nevertheless, for all others are as large in proportion to their popularity. In all there are 17 acres under cultivation, of which the major portion is devoted to Daffodils, but there are large quantities of *Pæonies*, *Tulips*, and other hardy plants. Though we occasionally hear of disease amongst *Narcissi*, the plants at Ditton are healthy and vigorous, and produce flowers of splendid substance and very rich in colour. It is possible they have never been better than this year in these two respects, and if excellent top growth may be taken as a criterion, the bulbs will be of the best quality when they are lifted. They are all grown on raised beds, the soil of which has been thoroughly worked and is in splendid mechanical condition, as well as abounding in the food that the plants are known by these specialists to require. The spectacle is such as can only be seen in the neighbourhood of the metropolis at any rate once a year, and it is therefore not to be wondered at that so many people find their way to Ditton.

A FEW OF THE CHOICER VARIETIES.

It we take the choice and new varieties into consideration it would be quite safe to say that nowhere can such a collection be found. Others have some of them perhaps, but no one in such numbers as those of Messrs. Barr. These, however, are not in the open field, and to see them we must enter an enclosure where they are comparatively safe from wandering depredators. It is an open question whether the premier position ought to be accorded to *Monarch* or to *Weardale Perfection*—that is to say, of the named varieties, for there is an unnamed bicolor that is distinctly superior to either. Of this more will probably be heard another season when it has been properly tested. *Monarch* is yellow both in the immense trumpet and in the perianth segments, while *Weardale Perfection* (fig. 69) is equally large, but is a bicolor having broad white perianth segments. They are superb—both monarchs of their respective colours. Let no one order rashly of these two, however, for the modest sum of 15 guineas is the catalogue price for one bulb of the former, while the latter can be had for 10 guineas. We are inclined to think that twenty years ago a Daffodil at 10 guineas per bulb would have received scant attention, but now it is not only asked, but readily enough obtained.

Apricot is a distinct novelty, and one which hybridises of *Narcissi* will hail with pleasure, as the trumpet shows distinct shades of red in the yellow ground colour, thus imparting unusual richness to the flowers. The perianth is white, and the flower is medium sized. *Lady Helen Vincent* (fig. 68), which, with the last named, received an award of merit from the Royal Horticultural Society on the 12th inst., is a handsome variety of the style of *Emperor*. The flowers are large, very substantial, and clear in colour, while the habit of the plant is dwarf. A beautiful bicolor is *Victoria*, which may be succinctly described as an

improved *Empress*. The flowers are of great substance, and the bulb is a strong grower. Another handsome variety is *Fred Moore*, of which the broad perianth segments are pale yellow, and the deep, shapely trumpet clear yellow. *Mrs. Walter Ware* is the name of a very attractive bicolor. The perianth is pure white, and the frilled trumpet golden yellow. This variety is a free yet dwarf grower and a profuse flowerer. The stately *Glory of Leyden* is now comparatively well known, as is the showy *Gloria Mundi*, which belongs to the *incomparabilis* section, and is conspicuous mainly by reason of its brilliant orange crown. With *Remarquable* the list of newer ones must close. It is of dwarf habit, and the colour of the broad-mouthed trumpet is very rich yellow; the perianth segments are much paler.

SOME OLDER VARIETIES.

Amidst the host of older varieties there are some that still stand above the remainder, such, for example, as *Emperor*, *Empress*, *Sir Watkin*, *Barri conspicuus*, *Horsefieldi*, and *maximus*, all of which ought to have a place in every garden where *Narcissi* are appreciated. *Golden Spur*, a beautiful form of *maximus*, and *P. R. Barr*, a rather small variety of *Emperor*, must not be overlooked, any more than should bicolor *grandis*, which is so valuable for late flowering. The lovely *Johnstoni* *Queen of Spain* will long remain popular, as will *M. J. Berkeley*, *J. B. M. Camm*, *Michael Foster*, and *princeps*. Of the lighter forms, of which *moschatus* and *cernuus* may be quoted as typical, the best include *Cecilia de Graaff*, *Exquisite*, *pallidus princeps*, *William Goldring*, and *W. P. Milner*, with *Snowflake*, but the later and the first named are rather scarce, and hence the price is somewhat high. These are a few of the many large trumpet varieties that are to be seen in such good condition at Ditton, and all of which are well worthy of a place in every collection.

Of the *incomparabilis*, one has been named as a standard variety—namely, *Sir Watkin*, to which we might advantageously add *Beauty*, *C. J. Backhouse*, *Frank Miles*, *Goliath*, *Queen Bess*, *Princess Mary*, and



FIG. 69. — NARCISSUS WEARDALE PERFECTION.

Autocrat as being above the average of merit. Besides *Barri conspicuus*, *B. Sensation* and *B. Maurice Vilmorin* must be grown; while of *Leedsis*, *Gem*, *Grand Duchess*, *Catherine Spurrell*, *M. Magdalene de Graaff*, *Monnie Hume*, and *Mrs. Langtry* ought not to be forgotten.

And so one might go on enumerating charming single varieties to the exclusion of the doubles, amongst which the common double Daffodil still stands pre-eminent. But we must stop. Those who would learn more or see those mentioned must go to Ditton at once, or the chance of admiring them will be gone for yet another year.—DAFF.

THE JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY

A FEW PICKINGS.

PART 3, vol. xxi, the April issue of the official record of the Society's work appears to be of unusual size, and is certainly of great diversity, while it is undoubtedly of marked excellence. The papers on the progress in "Fruit Culture," in "Vegetable Culture," and in "Market Gardening," from 1837 to 1897, by Messrs. G. Bunyard, A. W. Sutton, and J. Assbee respectively, are worthy of preservation by all who are interested in the important subjects which are treated so thoroughly. As citations were given from these papers when they were read in the autumn, we pass to take a few very brief samples from others.

THE HOUSE SPARROW.

A fuller, fairer, and more exhaustive examination into the value or otherwise to cultivators of this ubiquitous bird has seldom been seen than that of Miss Eleanor A. Ormerod and Mr. W. B. Tegetmeier. They have evidently sought assiduously to elicit the truth, and nothing but the truth. After examination of several witnesses, the sparrow is not pronounced a friend, but an enemy to the farmer and gardener, and ought to be decimated. Here is the summary :—

In the present space it is impossible to enter fully on this important national matter, but still we find, in addition to what all concerned know too well already of the direct and obvious losses from sparrow marauding, that there is evidence of the injurious extent to which they drive off other birds, as the swallows and martins, which are much more helpful on account of their being wholly insectivorous; also that, so far from the sparrow's food being wholly of insects at any time of the year, even in the young sparrows only half has been found to be composed of insects; and of the food of the adults, it was found from examination that in a large proportion of instances no insects at all were present, and of these many were of kinds that are helpful to us or harmless. Also it is well on record that there are many kinds of birds which help us greatly by devouring insects, and that where sparrows have systematically been destroyed for a long course of years all have fared better for their absence; and also attention should be drawn to the enormous powers of increase of this bird, which under not only protection, but to some extent absolute fostering, raises its numbers so disproportionately as to destroy the natural balance.

Here as yet we have no movement beyond our own attempts to preserve ourselves, so far as we legally may, from sparrow devastations; but in the United States of America (on the evidence of which we have given a part) the Association of the American Ornithologists gave their collective recommendation that all existing laws protecting the sparrow should be repealed, and bounties offered for its destruction; and the law protecting the sparrow has been repealed in Massachusetts and Michigan. Dr. Hart Merriam, the Ornithologist of the U.S. Board of Agriculture, also officially recommended immediate repeal of all laws affording protection to the English sparrow, and enactment of laws making it penal to shelter or harbour it; and Professor C. V. Riley, Entomologist to the Department, similarly conveyed his views officially as to it being a destructive bird, worthless as an insect killer.

In Canada, on October 6th, 1888, at the annual meeting of the Entomological Society of Ontario, Mr. J. Fletcher, Entomologist of the Experimental Farms of the Department, strongly advocated the destruction of the sparrow; and, in reply to the Hon. C. W. Drury, Minister of Agriculture (who attended the meeting as head of the Agricultural Department of Ontario), stated "that this destructive bird was no longer under the protection of the Act of Parliament respecting insectivorous birds, and that everyone was at liberty to aid in reducing its numbers."

Reasoning on the same grounds as to procedure in this country, we believe that similar action is, without any reasonable cause for doubt, called for here. The amount of the national loss, by reason of ravaged crops and serviceable birds driven away, may be estimated, without fear of exaggeration, at from one to two millions a year.

We do not pretend to offer suggestions as to what may be considered fitting to do by Government authority, but much of their own protection lies in the hands of farmers and gardeners themselves; and sparrow clubs, well worked, and always bearing in mind that it is *only this one bird* that is earnestly recommended to their attention, would probably lessen the load to a bearable amount; and we believe that subscriptions, whether local or from those who know the desirableness of aiding in the work of endeavouring to save the bread of the people from these feathered robbers, would be money wisely and worthily spent.

EXPERIMENTS WITH TOMATOES.

Mr. W. Neild records a series of experiments with various artificial manures on Tomatoes, and gives good advice on packing the fruits. Mr. Neild seems to have arrived at the conclusion that "potassic manure is of little or no use for Tomatoes." Seeing that the best results in 1896 were produced by the aid of liquid manure from stables; and in 1897 by, in one case, a mixture of nitrate of soda and nitrate of potash; and in the other, by the same ingredients, plus superphosphate of lime, we scarcely think he has proved his case. Persons who are interested in the subject had, however, better read his paper and judge for themselves.

HARDY PLANT BORDERS.

A combination paper by Miss Gertrude Jekyll and Mr. H. Selfe-Leonard ought to be both interesting and useful to lovers of hardy flowers. It is based on the association of selected plants, as shown in diagrammatic illustrations. These differ from any we have seen before, and are decidedly suggestive. As might be expected, the plants chosen include the best, and borders furnished as indicated must have an imposing effect. The paper is proof against "picking;" must be examined to be understood, and there will be no difficulty in comprehending what is so clearly presented.

NOTES ON SOME CURIOSITIES IN ORCHID BREEDING.

Mr. C. C. Hurst's paper on this subject is voluminous and exhaustive. It is something like a monument of investigation, and the records of accom-

plished facts are eminently worthy of the pages on which they are inscribed. We can extract nothing from the essay to fairly represent its character, but we can and do congratulate the author on the excellence of his work.

THE DEPTH IN THE SOIL AT WHICH PLANTS OCCUR.

There is much more in this thoughtful paper by Professor F. W. Oliver than its title would suggest to the general reader. It has the merit of being "fresh," and deals with a subject which is by no means a familiar one to cultivators of plants generally—the contractability of roots. It is explained as follows :—

The special feature associated with root-contraction, with which we have more particular concern here, is the manner in which it leads to the drawing of the whole plant down into the soil. As a root develops it continually penetrates deeper into the soil and comes into intimate contact by means of its root-hairs with the particles of the soil, and as the apical development continues it becomes in time very firmly fixed. When, now, contraction supervenes in the older parts, tensions arise which lead, in the case of roots normally fixed, to a gradual pulling down of the whole plant into the soil. So considerable is this tension that if the root be cut, a space 2 or 3 millimetres across may arise between the two cut surfaces. Three stages in the sinking of a young plant of *Phaedranassa chloracea* into the soil from this cause are illustrated.

The illustration referred to is very interesting, and not less so is another showing the dragging down of the tubers of *Arum maculatum* by the contractability of some, but not all of the roots, and hence the position of the tubers within the soil. The Professor concludes :—

I have attempted to bring together the main facts which have been ascertained—largely by Rimbach, Stroeve, and de Vries—in connection with the various means employed by plants in reaching their normal level in the soil. Owing to the difficulties attending continuous observations upon the subterranean parts of plants our knowledge is still much at fault, whilst the conditions under which many of the phenomena are exhibited are unknown. It is because the practical horticulturist has such unrivalled opportunities for studying these little-known phenomena in numberless instances that I am glad that the facts set forth above should appear in the Royal Horticultural Society's Journal.

HORTICULTURAL EXHIBITIONS AND SCHEDULES WITH THE PRINCIPLES AND PRACTICE OF JUDGING.

Very different from the foregoing is this paper by Mr. J. Wright. It is based on experience, and covers a wide field. Many familiar subjects are dealt with, and some that are not familiar to all cultivators and exhibitors. For instance, the working of what is termed the "Point Value" system of judging is made clear, and the origin and history of groups arranged for effect published for the first time. As is stated, the essence of the "point value" system of judging is based on the principle that every point or mark of merit accorded is of *equal value* (as it is), and can be represented in money. The precise amount is easily determined, and shown. The amount of necessity varies according to the total sum allocated, and the number of points accorded to the produce in competition. In Kent, a "penny a point" is allowed for allotments, and has proved so satisfactory, as tested in upwards of 200 instances, that the new plan is now called the "fair plan" by hundreds of men. The author goes on to say :—

Having given an example of the working of the "point value" system in which the prizes were very numerous, but small (as in the Kentish instances) it seems desirable now to test the plan where the prizes are high, and the classes and competitions of a national character. An opportunity is afforded for doing this by tabulating the prizes that *were* awarded in the orthodox way, and those that *would have resulted* if the "point value" system had been in operation in the two great classes at Shrewsbury last year. Here is an example :—

DECORATIVE DESSERT TABLE CLASS (Shrewsbury, 1897).

Societies' Prizes awarded.	Points recorded, ascertained value 1s. 11d. each.	Aggregate "Point Value," excluding decimals.
£ s. d. 1st 12 12 0 2nd 12 12 0 3rd 8 8 0 4th 5 5 0	105½ 104½ 99½ 96½	£ s. d. 10 2 2½ 10 0 3½ 9 10 8½ 9 4 11½
£38 17 0	406	£38 18 2

The reason of the money value of the Society's first and second prizes being equal was the addition of £5 with the Veitch medal to the first prize.

Taking no account of this, but regarding the addition as an award of honour won by one point, advocates of the "point value" system would say that the

1st prizewinner had	<i>above</i>	his just due	£2 2s. 9½d.
2nd	"	" <i>above</i>	" £2 11s. 8½d.
3rd	"	" <i>below</i>	" £1 2s. 8½d.
4th	"	" <i>below</i>	" £3 9s. 11½d.

If the total amount allocated in the schedule could not be exceeded by 1s. 2d., it would only be necessary to deduct 3½d. from each of the prizewinners to insure an exact division of the £38 17s.

Difficulties, disqualifications, and incidents in judging are dealt with in the paper.

CHRYSANTHEMUM SPORTS.

The comprehensive essay by the Rev. Professor G. Henslow will be read with avidity by many growers of the Autumn Queen. The nature of sports is ably discussed, and long lists of examples given. The subject is

treated scientifically and practically in its various aspects ; but the problem is not solved, for the talented author says :—

If we ask what causes all these differences to arise respectively, at present there is no reply, and therefore we do not know what steps to take to induce them to form respectively, until Nature herself has supplied the first indication of a change. The first thing to do, if we want to discover a cause, is to look out for coincidences. If a sport appear, I would ask the florist to note anything and everything he can observe as to the conditions surrounding that plant, and to find out its ancestry. It would seem desirable to note also the climatic conditions at the time, as sports of a like kind in plants, as we have seen, often appear simultaneously both in different places of the same county or counties, and also in different seasons. It is only by accumulating coincidences that we can arrive at the first suspicion of a cause. When we think we may have discovered that a certain result seems to occur often or generally under certain particular circumstances, then is the time for experiments, to try and induce the same result to occur by artificially supplying those circumstances. Practical men are often inclined to look suspiciously on scientific men as being too theoretical ; but the reply is, that if only practical men would observe more, and record their observations, and then hand them over to the scientist, each party would, without doubt, benefit very largely by the other. The scientist has no such grand opportunities as the practical man. Thousands of facts familiar to the latter would be inestimable boons to the former, if only he could get at them. The practical man, unfortunately, does not always perceive their significance, but if every sport that has occurred on *Chrysanthemums* had been recorded, coupled with the whole history of the plant and description of its surroundings, the method and kind of soil used, &c., we should probably have known much more than we do now, as Dr. Masters suggests, who thus wrote :—"Whoever will investigate the cause of these sudden outbursts of local variation must, of course, sedulously examine each case for himself, according to the measure of his ability and of his opportunity. The circumstances, the history, the progress, the anatomy of each particular sport must be investigated, both absolutely and in relation to similar outgrowths in other plants. Until this is done, and it has not been done yet, any explanation as to the cause of the phenomena must be a matter of speculation." Could these admirable recommendations be carried out, I might perhaps at this moment have been holding forth on "The Causes of Sports, and How to Produce them," instead of being compelled to expose my ignorance by saying that neither I nor any botanist, as far as I know, can yet fully expound the "why" and the "wherefore" of bud variation.

All will hope that Mr. Henslow will yet have the opportunity for "holding forth" on the text he suggests, and which few indeed could treat so well.

We consider the entire issue well worth the charge that is made (5s.) to those who are, unfortunately, non-Fellows of the R.H.S. Those who are enrolled have it for nothing.

THE PLETHORA AND PROSPECTS OF GARDENERS.

It was with very great interest that I read the remarks of "An Old Provincial," on page 307. Like himself, I think it is sad to see the number of gardeners, ever on the increase, seeking situations through our journals alone. We know that vacancies are very few in comparison, and that a large number of good gardeners are crowded out through the numbers being so great, and I fear that it will continue now that the premium system is almost done away with.

Knowing these things one is filled with wonder when one hears of the modern woman taking to our vocation, for which, in my opinion, she is quite unsuited. I should like to know if she goes through all branches of training as a probationer, which, if she is to be practical and capable of managing a gardening establishment, she must do. I can seem to picture her making a Mushroom bed on the top tier of our Mushroom houses, stoking the furnaces late at night as occasion may arise, and scores of other unwomanly duties, known only to our fraternity, which to make a practical gardener must be learned. Perhaps I shall hear that she starts at the top of the tree and leaves these duties to others, and if such be the case I think she will keep few situations from the man who has worked his way up from the shed.

Women servants are in demand all round us, and their remuneration is quite as good as those in the garden, while the work appears to me to be much more suitable for her. In a florist's show house she does well, but as a gardener she is a mystery to me.—G. M., *Sussex*.

If a ballot could be taken of the articles appearing weekly in the *Journal of Horticulture*, as to which were read with greatest interest by hundreds of young gardeners, I have no hesitation in saying that those referring to the prospects of gardeners would come out at the head of the poll. It is doubtless the worthy intention of those correspondents who write on this subject to give good advice to the rising generation of gardeners, and these should feel gratified to know how great is the interest taken in their welfare. At the same time, he who offers advice to young men, which if taken may alter their course of life, assumes a great responsibility, and unless he has the best of reasons for what he says he should hesitate to advance opinions which may have results that he does not foresee.

Everyone who understands the matter will agree with the opening sentiments of "Onward," on page 204, but does he not let his enthusiasm run away with him in the concluding paragraph? where he advises young men "not to be led away by the glamour of appearances connected with many private gardens, but if they have energy and brains to get into one of the finest schools of horticulture in this country or the world—viz., a great market establishment." True, the statement is qualified, and

assuming that the majority of young gardeners are blessed with energy and the average amount of brains, what would be the result if "Onward's" advice were generally followed? There would be a wholesale migration from private establishments, and a consequent flooding of a branch in which there is ample room for improvement in the way of shorter hours and increased pay. Your correspondent concludes as though he had solved the problem after giving the foregoing advice. There are doubtless openings for ability in the trade, as also there are in private service, but the facts of the case seem to be that it is a question of supply and demand, and the former is double that of the latter.

Mr. Street, on page 284, approaches the matter from the point of view of a private gardener, making suggestions from which improvements might accrue without taking drastic measures. I presume that your correspondent's idea is to adopt means of checking the output of gardeners, though he has not made the way quite clear. Suppose that to every head gardener in good establishments there are half a dozen juniors. They are all aspiring to the one position, therefore the chances are six to one against them, and assuming that the best come to the top, there must be others with the average ability who have to be satisfied with a lower place. As long as this is so the difficulty in obtaining head places will always be present.

Perhaps, with a little sifting and more discussion, Mr. Street's idea of forming an association might be helpful. He appears, however, to have omitted any mention of the most important section—viz., the employers. The majority of head gardeners' positions now-a-days are filled through the personal influence of friends rather than the recommendation of gardeners, and probably this is why the best men are not always found in the best places. Would the formation of a committee obviate this? If so, then the sooner it is formed the better; but I doubt it. As long as there is no special qualification to be obtained before a man can call himself an accomplished gardener the trouble will remain; and, even then, would employers confine themselves to engaging only those men who possessed the necessary qualification? Without the coalition of those holding the purse-strings I fail to see the advantages accruing from an association such as your correspondent suggests.

"Reform," on page 290, protests against the custom of paying premiums—and rightly so, unless there are some advantages to be obtained from it. Anyone paying a premium expects in return to be taught a trade or profession, and when his apprenticeship has expired he is supposed to be competent. If this were so, then a young gardener, after paying for his learning, should be efficient when his time expires. But it is not so. He pays a premium to learn the rudiments of his calling, and then has to go through a course of training in several other establishments before his gardening education is completed. If the custom of paying premiums were a general one, perhaps there would not be such an over-supply of gardeners; and if such payment would insure, or even assist, in the obtaining of a suitable situation, there would be no cause for complaint; but I wonder how many present-day gardeners who are holding the best positions in the country paid a premium to commence with. One thing I know, there are many who did not. The guiding spirit of the *Journal of Horticulture* has always shown sympathy with gardeners old and young, and would like to see them all happy; the methods of training is a subject of more than passing importance in leading to that desirable end.

The three correspondents quoted have approached the matter from different standpoints; but is there not another? Could not a great deal of work that is done by young men in training for gardeners, be done as well by local labour—men not in training for professional gardeners, but as worthy garden workers? If this is so, would not a better class of local workers be raised, men who would be perfectly content as such, with a corresponding reduction in so-called trained gardeners jostling against each other for filling vacancies which are so few and far between? True, an occasional bright, energetic worker might force himself upwards and onwards by sheer merit. By all means let him do so. By the present system of making gardeners are there not hundreds of young men who are neither particularly devoted to their duties, intelligent, studious, or energetic? There are far too many of them careless, thoughtless, and not a few reckless, more given to sport than to work, yet some of these by accident or favour crowd out intrinsically better men, and lower the status of British gardeners.—EX-FOREMAN.

FRUIT BLOSSOM.

THERE is a prolific display of Plum blossom at the present time. Green Gage Plums have not had so fine a show of bloom for years. Victoria Plum trees last year produced little blossom and less fruit. It is exceptional for the latter to fail in fruiting, but the trees claim a rest sometimes. This season they are blooming freely.

Pears also are exceptionally loaded with bloom. Williams' Bon Cbrétien failed last year to bloom, and there was only a poor crop of Louise Bonne of Jersey. Both these varieties, however, are blooming well this season.

Bigarreau Cherry trees promise well for bloom. Last season was a very poor one. Morello Cherries are furnished well. Last year the crop was nil. This seldom occurs with these free bearing trees. At the time of writing Cherries are not in bloom, but a few days will bring them on.

On the whole, there will be a good display of Apple blossom shortly. Blenheim Orange failed to bloom last year, but this year there is an abundant promise. The same may be said of Wellington, Keswick Codlin, and Duchess of Oldenburg as regards bloom. Last season these varieties produced good crops.—E. D. S., *Gravesend*.

THE YOUNG GARDENERS' DOMAIN.

YOUNG GARDENERS' PREMIUMS.

THE above was really the gist of an article by "Reform" in the *Journal of Horticulture* for March 31st, page 290. I can recollect a number of places where from six to a dozen young gardeners are employed, and in each case, when a vacancy occurs, and the engagement of an experienced hand seems desirable, preference is given to a youth with a small premium to fill it. "Reform" also tells us that the teaching of young gardeners is a duty largely devolving on the foreman. No doubt this is so, but I do know of two gardeners who take interest in their young men, and who endeavour to teach and assist them. However, I think this premium-paying is, generally speaking, in need of amendment.—A. H., *Stuffs*.

LACHENALIA TRICOLOR.

LACHENALIA tricolor is one of an exceedingly pretty family of Cape bulbs belonging to the order Liliaceæ. The dark green Orchis-like foliage is spotted with dull purple, and makes a grand contrast to the handsome spikes of orange, green, and yellow flowers. These plants were thought a great deal of formerly, and there are some people who still highly appreciate their beauty. But there are many who are without them, which is a great pity, as they are exceedingly valuable grown in 5-inch pots or baskets for early flowering. If the flowers are required as early as Christmas the bulbs should be potted in June in a compost consisting of three parts good loam, two parts leaf soil, and well decayed manure with a little sand added. They should be grown in a cold frame until about the middle of October, when they may be placed in a moderate temperature. They do not like much heat. If a succession of flowers is required a couple more pottings should be made at intervals of about three weeks. Water must be gradually withheld when the foliage begins to show signs of decay, and when they have quite gone to rest place them in a cool place until the time for repotting comes round. If the pots are placed on their sides so that no water can enter, a very good place to keep them is under the stage in a cool house.—S. S., *Lockinge*.

A GRUMBLE.

"EXCELSIOR," on page 311, remarks that he was at one time impressed by the scarcity of the thoughtful and scientific class of gardeners. Apply that to the young men, as a body, and I agree with him. Since I have been foreman I have not been favoured with a journeyman capable of potting or watering plants in an intelligent manner. I have had several assistants under me who had been, to my surprise, well recommended. There ought to be some test of ability, such as compulsory examination of young men before they are launched on the market as journeymen. A number of young men who pay premiums to go into a large garden for three years, and are then sent out to take charge of a range of glass, are unequal to the duties involved. My experience of several of them is that they are better suited to serve behind a shop counter than to work in a garden, where they seem to dread the soiling of their hands. It is not such men who are required in a garden, but men not afraid of work, either rough or otherwise. Doubtless these remarks will raise the ire of some of the dandies if by chance they find time after the perusal of "Sporting Life" to look into the pages of the *Journal of Horticulture*. I am proud of some of the more promising, like "Semper," "Excelsior," and "Nil Desperandum," and should like to see more follow their example, while if I had an equally able pen I would endeavour to do likewise.—GRUMBLER.

[Why is not the pen of this good "grumbler" equal to those of others that he seems to envy? Is it not his own fault? Without doubting his zeal and usefulness in the garden, he has much to learn educationally, and should learn it before he can hope to win a high position by the test he proposes (examination) in the ranks of accomplished British gardeners. Absolutely as the result of perseverance and success in self education, not unconnected with the *Journal of Horticulture*, a particularly able gardener has just received a valuable Government appointment; but however skilful as a workman, that alone could not have secured him the position.]

NORTHUMBRIAN WILD FERNS.

WILD Ferns grow in great abundance in the Northumbrian moors, crags, and woods, and in summer it is a pleasure to go out hunting for specimens. The Brake Fern (*Pteris aquilina*) the only British species, is very common, often attaining the height of 3 to 4 feet. The plants look very beautiful in summer, until the frost comes and cuts them down. The roots are long and strong, sometimes penetrating as far as 6 feet down in the ground. The Male Fern (*Lastrea Filix-mas*) is called by this name because of the robust appearance of the plants. The fronds are densely scaly, and grow from the centre of the tuft to the height of 3 feet, broadly lance-shaped. In a sheltered position they remain green all the winter, and are very useful for rockery work. The prickly-toothed Buckler (*Lastrea dilatata*), more spreading in habit and of a smaller form, is plentiful. In the shade of the wood is to be found *L. montana* sparingly. The fronds are from 8 inches to 1 foot in height. It has a pleasing effect in garden rockworks, and enjoys a moist shady position. The Hay-scented Fern (*L. cœmula*) is of moderate size and drooping habit. The plants are rare in some districts, while *L. spinulosa* is plentiful, and known by its red-coloured stem. The Lady Fern (*Athyrium Filix-fœmina*) is to be found wherever you go, and makes a good companion for the Male Fern.

The hunter in his search for the Moonwort (*Botrychium lunaria*) has to look very carefully amongst the short grass, for being of the same colour it is rather difficult to find, as it is so small. It is easily known by

the two distinct fronds, one of them being fertile, and grows between 2 and 3 inches high. The Adder's-tongue (*Ophioglossum vulgatum*) resembles the Moonwort, and is often found in a damp field, growing to the height of 4 inches; it is easily cultivated in pots or shady parts of the garden. The Wall Rue (*Asplenium Ruta-muraria*) is a Fern of dwarf habit, to be found growing in old walls and rocks. The largest fronds I have seen are about 3 inches long. In one place I saw a wall about 80 feet long and 7 feet high completely covered with this distinct Fern. *Asplenium Trichomanes* or Maidenhair Spleenwort is a pretty little Fern, known by its dark stem. I have not seen much of the Green Spleenwort (*A. viride*), the few found on the rocks being only 4 inches high. *Asplenium marinum*, an attractive evergreen Fern, is also found on rocks on the coast; the fronds are from 4 to 6 inches in length. It is not very plentiful, as the visitors make a point of taking the roots away. Another of our evergreen *Aspleniums* is the *A. Adiantum nigrum*; when found in old walls and rocks the fronds are from 3 to 4 inches in length, but in shady hedgebank they are a foot in length.

The Scaly Spleenwort (*Ceterach officinarum*) is a dwarf, distinct looking, but pretty Fern; the fronds are thick and fleshy, the upper surface rich green, while the under surface is covered with rust-coloured scales. It is rare; I have only met with it once, and there are only about three plants to be seen; the fronds did not exceed more than 3 inches in length. The Hart's-tongue (*Scolopendrium vulgare*) is a very common plant, and its shining bright fronds contrast boldly with the feathery aspect of the more common Ferns. It inhabits old walls and woods. *Blechnum Spicant*, or common Hard Fern, is one of our native kinds, which produces both fertile and barren fronds. The Bladder Fern (*Cystopteris fragilis*) grows from 4 to 6 inches in height. *Polystichum lonchitis* is represented, while *P. angulare* and *P. aculeatum* are found in abundance. *Allosorus erispus*, or Parsley Fern, is abundant on the Cheviot Hills; *Polypodium vulgare*, growing on crags and mossy banks, is well distributed over the county; while *Polypodium phegopteris* and *P. dryopteris* are rare, though found in a few localities.—PONICA.



HARDY FRUIT GARDEN.

Disbudding Apricots, Peaches, and Nectarines.—Frequent and light removals of ill-placed and other superfluous shoots is necessary at the present time in following the best and most approved system of management. The operation is carried out gradually, so that no severe check is given to the trees by the sudden removal of a large quantity at one time. The weather, as well as the condition of the growths, governs to some extent how disbudding should be carried out.

During a cold period very little progress is made by even the most forward shoots, and disbudding may, as a rule, be discontinued until a warm period again sets in. On well trained trees the shoots which are required to be left for furnishing are those best placed in all instances, whether on the upper side of branches, or situated on the front. The shoots on the under side may, generally speaking, be considered superfluous, while growths at the back of branches and near to the wall or fence are obviously ill placed for training. Of those which are properly placed a rigid selection of the best must be made, so as to prevent overcrowding in the immediate future, when the growths have advanced and the foliage enlarged.

The main objects of disbudding trees on walls are to prevent overcrowding and an undue strain upon the trees, to tolerate no inconveniently placed shoots, and to provide a similar number of succession growths for taking the place of the present season's bearing shoots, which will subsequently be removed. In disbudding rub or cut off the strongest first, and as these are usually situated in the upper parts of the branches, commence in those positions, first dispensing with the shoots behind the branches, then the most awkwardly placed in other parts, finally thinning out the rest. With Apricots a few of the best fore-right shoots may be shortened to three leaves for forming spurs. Peaches and Nectarines bear, as a rule, best on well-ripened young wood of the previous year. The fruit-bearing shoots must have careful attention, securing for each a succession shoot at the base, and a leader at the extremity, the latter for attracting sap to the fruit.

Disbudding Plums and Cherries.—Special attention ought to be given to young trees, as they make numerous and strong growths, which must be thinned and regulated in good time, in order that a proper foundation and shape may be laid. Plums to be and continue fruitful require to be renewed frequently with young growths, which bear freely when two years old; therefore shoots and branches above that age on walls may annually be cut out, their place being taken with young extensions. When Cherries bear well on spurs it is advisable to encourage this system, but failing to do this a judicious annual laying in of young wood may produce more satisfactory results. Disbud Morello Cherries similarly to Peaches and Nectarines, though a larger number of growths may be retained.

Disbudding Apples and Pears.—Established trees trained on walls may be disbudded freely in order to reduce the usually large number

of growths which crowd the spurs. Young pyramids and bushes in the open will also be better for timely attention in the work of disbudding, thus early dispensing with unsuitable growths. The result will be that those retained will develop stronger and grow more freely than when having to compete with a host of others.

Outdoor Figs.—Figs on walls should be trained thinly, the leaves being large, and requiring much room. The crowding of shoots does not benefit the trees, hence any old or ill-placed growths may with advantage be removed. The shoots retained ought not to be shortened, as the fruit is borne towards the extremities of the growths.

The present month is the best for planting Figs, selecting one-year-old trees for the purpose. A friable loamy soil that is known to be of a calcareous nature, and not too highly charged with organic matter in the shape of manure, should be prepared, and the whole made firm before planting. The subsoil should be naturally well drained.

Assisting Newly Planted Fruit Trees.—Extended periods of dry, sunny, and windy weather during spring are frequently very trying to newly planted fruit trees against walls, and sometimes in the open. It is not advisable to saturate the soil too often with water, which cools the particles and renders the formation of new roots in it a slower process. Of course water must be given to fender soil moist enough, but use every endeavour afterwards to conserve the moisture present by affording a light mulching of flaky manure or leaf soil. During the driest periods frequently syringe the trees, which is better than drenchings of water at the roots, for the purpose of aiding a healthy growth.

Watering Established Trees.—Lack of moisture in the soil during the present and succeeding month is frequently the cause of early insect attacks, aphids and red spider being especially prevalent on trees that may be dry at the roots. It is not only the lack of moisture, which is itself a form of food, but inability of the rootlets to gather other food when water is not present in the soil to dissolve and make available the necessary constituents. To such trees, therefore, that are known to be dry at the roots apply water copiously, and follow by mulching the surface.

FRUIT FORCING.

Cherry House.—Directly the stoning is completed the fruit commences colouring, and takes its swelling for ripening. The temperature may then be raised, but it must not exceed 65° by artificial means and 55° to 60° at night, with a little ventilation, increasing it at 70°. Subject to leaving a little air on constantly at the top of the house, close at 70°, but the temperature must not be allowed to exceed that degree in the early part of the day without full ventilation. From the commencement of colouring until the trees are cleared of their fruits syringing must cease, or the fruits will crack, but good moisture should be maintained. Aphides must be kept down by an insecticide, but only fumigation or vaporisation with tobacco or nicotine can be had recourse to after the fruit commences ripening. The border must not lack moisture, and liquid manure should be liberally accorded to trees in pots.

Figs.—Earliest Trees in Pots.—The fruits of the very early varieties are ripe, while later varieties are nearly so, hence the supply of water at the roots must be diminished, discontinuing syringing, and affording a free circulation of warm air, leaving the top ventilators open at night. Although watering is advised to be lessened during the ripening of the fruit, the soil must be kept moist, for this, with moderate moisture in the atmosphere, is essential to the health of the foliage. As soon as the first crop is cleared off the trees syringe them twice daily, renewing the top-dressing, and supplying the roots with weak liquid manure. If the second crop be very abundant the fruits must be thinned, leaving those at the base of the shoots, for it is important not to overtax the trees for early forcing next season.

Early-forced Planted-out Trees.—The trees must now have plentiful nutriment. If the soil require moisture give a thorough supply, and mulch with partially decayed rather lumpy manure. Do not cease syringing until the fruit commences ripening, avoiding then a superabundance of moisture about the house, and provide a free circulation of air until the fruit is all gathered.

Vines.—Early Forced.—To Vines with the Grapes colouring afford a thorough watering, and mulch afterwards with well-sweetened horse droppings. This refers to the inside border. Where the Grapes are fully ripe a reduction of temperature is advisable, yet not below 60°, and affording moderate moisture for the benefit of the foliage. The moisture will not do the Grapes any harm provided the air is changed by free ventilation, admitting a little air constantly.

Succession Houses.—Attend to stopping and tying the shoots. Where the space is restricted stop the growths two joints beyond the fruit, and as foliage is necessary leave the laterals on the stem, both above and below the bunch. Pinch these at the first leaf, especially the basal ones, also above unless there is space for development, when the laterals may be allowed to make two or three joints, but no more growth must be encouraged than can have exposure to light and air. After the space is fairly furnished keep the growths closely pinched to one joint as made. Where there is more space stopping will not take place until growth has extended four or more joints beyond the fruit, pinching the shoot at the joint when the leaf is about the size of a penny. The great evil is overcrowding, which deprives the foliage of the essential light and air, and restricting the growths is intended to prevent that.

Routine.—The tying of the shoots into the places where they are to remain during the summer is an operation demanding much attention. It is a common practice to commence tying down the growths as soon as they are long enough to bend. This is not advisable except as a precaution against injury from frost or scorching, as the shoots at this stage are so tender that the slightest twist the wrong way breaks them. It is a

better plan to defer tying down until the shoots are less sappy, which may be when the fruit is forming; but a better practice still is to so dispose the rod that the shoots, instead of having to be brought down to a nearly horizontal position, will have an incline upwards, yet sufficiently outwards to admit light to the basal leaves of the growths.

Afford Muscats in flower a free circulation of rather dry air, and a temperature 80° to 85° or 90° by day, falling to 70° or 65° at night, raising the points of the bunches to the light, and liberate the pollen at midday by gently rapping the footstalks of the bunches. If there is a deficiency of pollen take it from those that afford it plentifully, as Black Hamburgh, Foster's Seedling, and Alicante, and apply it to the shy setting varieties with a camel-hair brush, previously removing the "caps" by a gentle brushing over of the bunches.

Thinning Grapes.—Where there is a quantity to be thinned commence as soon as they are out of bloom with the free-setting varieties, such as Black Hamburgh, and some, like Gros Colman and Gros Guillaume, may be thinned whilst they are in flower. Muscat of Alexandria, Lady Downe's, and Mrs. Pince, however, must not be thinned until the properly fertilised berries can be determined by their taking the lead in swelling. Follow it up early and late, and on dull days. Surplus bunches may be removed boldly, as overcropping is alike fatal to well-swelled berries as to colour and finish, also next year's crop. Feed swelling crops liberally, either by surface dressings of the approved advertised fertilisers washed in or liquid manure, and maintain a moist genial condition of the atmosphere.

Young Vines.—Those planted last year are breaking naturally, and may be assisted with gentle fire heat in cold weather. The canes will have been depressed so as to cause the buds to break regularly down to the basal ones, when they can be tied in position. Disbud, leaving the best shoots about 18 inches on both sides of the cane or (now) rod. Crop very lightly, one or two bunches being the maximum. Any extra strong Vines planted to fruit early, and afterwards to be cut out, may carry a bunch on every side growth, but six to eight bunches, according to their vigour, are more satisfactory than a greater number to a Vine.

THE BEE-KEEPER.

SPRING MANAGEMENT.

SUCCESS or failure in bee-keeping depends greatly on the spring management, and as no two seasons are exactly alike bee-keepers must be governed by the strength of their stocks, the state of the weather, and when honey is likely to be obtained in abundance, before deciding on what is necessary to be done in the apiary. It is, therefore, impossible to lay down any hard and fast rule, as it would probably only end in failure. If we make a comparison between the present season and a year ago, it will be at once apparent that different treatment is necessary. At the present time the majority of our stocks are in good condition—indeed, we do not remember them being in a more forward state at this early date; whereas a year ago they were quite the opposite. They then required careful management before they were of the desired strength to store a surplus.

Colonies that are headed by young fertile queens, and which went into winter quarters with a numerous progeny of young bees, were well supplied with stores early in the autumn, will not require feeding, as the fruit trees will soon be a mass of bloom. But where several stocks of bees are kept we invariably find some that require attention. It is not advisable to handle the bees or to lift the frames out of the hives unless there is a good reason for doing so, as it is impossible to do this without lowering the temperature of the hive. This should be guarded against, as it may result in chilled brood and its attendant evils. Neither is it advisable to remove any of the coverings, as beginners are sometimes tempted to do when a spell of fine weather sets in, as from experiments we have made we are strong in the belief that it would be a decided advantage to provide extra coverings throughout the early spring. If anyone has any doubt on the matter let them closely observe the difference between two colonies of equal strength, one of which has a quilt and, say a couple of thicknesses of carpet or some warm material, and the other half a dozen warm coverings, on the top of which a piece of board is placed. On examination the latter will be found several degrees warmer than the former.

FEEDING.

From the above it will be seen that warmth is essential. It is, however, of little effect if there is a shortness of stores in any of the hives. Although the past winter has been exceptionally mild, there has not been an increased consumption of stores. This is the more remarkable, as in previous mild winters a much greater number of stocks required feeding at this date than at the present time. How is this to be accounted for? Chiefly, we believe, to the fact that after they were fed up to the desired weight rather earlier than usual last autumn, a spell of fine weather set in, and as there was a great wealth of flowers in all directions which succeeded the rains after the

exceptional heat in July, the bees were able to store an extra supply of natural stores, from which they are now deriving benefit.

If feeding is necessary they may now be supplied with thin syrup in the evening made in the proportion of 1 lb. of sugar to one imperial pint of water. It may be prepared by boiling it until the sugar is dissolved. If only a small quantity is required it is not necessary to boil it, as boiling water poured on the sugar and well stirred will answer the same purpose at this season. Whatever feeder is used it should be one that does not allow an escape of heat from the brood nest. We prefer the system of feeding on the top of the hive in preference to placing it underneath the frames, as in the latter case, if the syrup is not cleared up before morning, the bees from the other hive will find it out and thus cause robbing; whereas in the former, if the feeder is well covered up, no robbing will take place, and if the syrup is given warm (which it always should be at this season), it will be all carried down into the hive before morning.

One of the simplest and most inexpensive feeders is an ordinary honey jar. Tie a piece of thin muslin over the mouth, cut a hole through the quilt the same size, and insert a piece of perforated zinc. This will prevent the bees escaping or being disturbed when refilling the bottle. Place the bottle mouth downwards over the zinc, and the bees will take the syrup readily without an escape of heat from the hive.

PERFORATED ZINC FLOORS.

Are perforated zinc floors an advantage? We are inclined to reply in the negative. At certain seasons of the year they may be an advantage, but from this date onwards for a few weeks we think warm solid floor boards are better. We have several zinc floors in use, but the bees in the hives under which they are placed are not in any better condition than those having solid floors; and as we think the brood nest will be warmer in those hives having solid floors now that breeding is going on apace, we shall take the first opportunity of removing the zinc, or placing a board underneath until more ventilation is required.

During the winter they have hitherto answered admirably, as there is always a circulation of air underneath the frames when they are in use, and if by chance moisture permeate through the sides or roof of the hive, the interior will always be found drier when they are in use than if it is a solid wood floor. Hives that are already fitted with ordinary wood floors need not be replaced with zinc, as ventilation may always be provided by opening the entrance the full width, or by wedging the hive half an inch off the floor board. This we have done with complete success.—AN ENGLISH BEE-KEEPER.



All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **8, Rose Hill Road, Wandsworth, S.W.**, and **NOT** to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Carpet Bedding (H. G.).—We do not know of any work now in print besides the one you mention. Carpet bedding is not nearly so popular as it was some years ago. Close low growing plants are now chiefly used for covering the ground, taller flowering or fine-foliaged plants being inserted thinly, so that each may display its individual beauty instead of growing into a dense mass.

Current Garden Literature (W. Smith).—Sound and reliable information—not the effusive vapourings of sensation mongers—has been given in the columns of the *Journal of Horticulture* on every subject mentioned in your letter, and will be again. It does not follow, for obvious reasons, that every reader finds exactly what he particularly wants to know in each issue, but he has only to state clearly his requirements and the means for attaining the object in view, to be furnished with such guidance as is applicable to the particular case. You are at liberty to test the matter by making your desires and cultural conveniences clear for the cultivation of any kind of plant, or the production of any kind of crop, on which you most desire early information.

Cucumber Plants with Large Leaves, &c. (A. D. H.).—The large foliage and thin stem, with the internodes long, may be due to the forcing nature of the compost—three parts well-chopped turf and one part short peat moss manure, nearly all horse droppings. They are very green, and, as you say, have too much nitrogen. The best thing to use would be equal parts of bone superphosphate and wood ashes, using 4 ozs. of the mixture per square yard. The mixture, which should be dry and crumbly, will tend to stiffen the plants, and promote fruitfulness. We have found it answer remarkably well with both Cucumbers and Melons. If the roots are on the surface use the superphosphate with an equal quantity of loam, and better apply too little than too much, not exceeding the 4 ozs. per square yard.

Birds and Fruit Buds (Lancashire Subscriber).—Your letter has reference mainly to Gooseberries, but the samples you send appear to be of Black Currants, and very poor samples they are. Had they been packed in a little green grass or a soft green leaf, and not misdirected, they would have arrived in much better condition, instead of being practically dead, with not a vestige of green about them. See instructions for packing below, and the correct address above. It is impossible to say "if an insect in the bud is the cause of the action of the birds," as there were no buds to examine. All had either been eaten by birds or dried up and rubbed off in transit. If the buds of the Black Currants were swollen, they were infested with a ruinous mite (*Phytoptis*), and nothing can be applied to reach the enemy within the buds. Whether the birds take the buds because of any insects there may be in them or not, the results are the same, as it is simply a question of no buds no fruit. Bullfinches are most destructive among fruit buds, even a pair of these birds often doing great damage. Sparrows when in flocks often make almost a clean sweep of the buds on Gooseberries. Tits are also destroyers of fruit buds, but are usually less destructive than bullfinches and sparrows. If you can net the bushes against birds in spring, by all means do so. We have seen thousands of buds saved by dashing newly slaked lime all over the branches in spring, when they were wet with dew. The lime adheres, and the birds do not like it. It must be done promptly on the first attack. Old "dead" lime is of no use. A first-rate authority recommends the following as still more effectual:—Take of fresh quicklime, 5 lbs., choosing the lightest lumps; flowers of sulphur, 10 lbs.; water, 10 gallons. Boil half an hour, keeping well stirred; then slake $7\frac{1}{2}$ lbs. each of quicklime and common salt in boiling water, adding to the above mixture also enough water to make 30 gallons. Strain through a hair sieve, and spray on every part of the trees and bushes when they are dry. Passing black thread in all directions over the bushes sends sparrows elsewhere, and it can be done ten or twenty times more quickly with a simple appliance, known as Royle's Garden Webber, than by passing the thread through the fingers. Neither this nor any applications can save the buds of Black Currants if they are infested with the mite.

A Stubborn Pear Tree (Kewhurst).—We are obliged by the reference. The tree, large in proportion to its roots when removed, has by no means recovered from the severe check it received. Some trees of the same nature are years before they make healthy growth, while others, especially if not assisted, never make good progress, but remain mere stunted cripples. Assuming your tree is covered with blossom, do not hesitate to remove three-fourths of the trusses or more. Perhaps the best plan would be to remove them all, though you may not like to act so thoroughly. This you may remember, however, that the fewer the number of trusses retained the greater the chance of leaf or wood growths issuing. Possibly the branches were not cut back sufficiently to clean healthy looking wood. Wherever there are signs of wood growth there should be no blossom beyond it. It might be well to cut some of the branches out entirely. This depends on the number, but if the more promising are 15 to 18 inches apart there will be quite sufficient for bearing fruit. Should several of the blossoms set, as those of enfeebled trees often do, the fewer the fruits that are allowed to swell the better. When a plant or tree is enfeebled, yet has sufficient strength to produce flowers, it will produce them in an effort to perpetuate its kind by the production of seed, even if it perish in the attempt. Give another dressing of nitrate of soda, scattering it evenly on the soil, at the rate of $1\frac{1}{2}$ oz. to the square yard from the stem outwards beyond the extension of the roots. Run the hoe through the surface frequently, when it is dry, to admit warmth, and before hot weather sets in give a pailful or two of warm water and cover with manure to prevent evaporation and the consequent shrinkage and cracking of the soil. Syringe the tree as often as you like, or can, in dry weather. If the soil is moderately dry now a pailful or two of decidedly warm water, with 1 oz. of nitrate of soda dissolved in each 3 gallons, might stimulate root action more quickly than by sprinkling the salt-like fertiliser on the surface. Your immediate primary object should be to incite free root action and wood growth, regarding blossom and fruit at present as of secondary importance. Large trees with few roots are tempting to the inexperienced, but all the same delusive, and often dear at any price or none.

Names of Moths (Somerset).—The author of the series now appearing in our columns on the garden species requests us to state that he follows the nomenclature adopted by Doubleday, and supported by Newman, which in some respects differs from that of Westwood and Morris, which you mention. There is also a still newer and third nomenclature, based on a revision of names and positions, which has not yet received general approval. We should recommend you to get a synonymic list of British Lepidoptera, which was compiled for the entomologist, and is published by Simpkin, Marshall & Co. for 1s. This will enable you to refer to any species under its different names.

Black Hamburg Leaves with Scarlet Leaf-ribs (R. D.).—We have not seen leaves similar to those submitted before, but on subjecting them to chemical tests there appeared a considerable percentage of potash, and this probably may be the cause of the high colour—very beautiful under artificial light—of the main and side ribs. We do not consider you could do anything but supply a dressing of superphosphate (30 per cent. soluble phosphate), using 2 ozs. per square yard, or preferably apply that quantity in 4 gallons of water. There is no disease, and we should consider, with the superphosphate, the Vines would finish their crops well. Have you used any particular or special fertiliser? The leaves are very fine; yet we advise more air, especially in the early part of the day, so as to dissipate any moisture before the sun acts powerfully upon the foliage.

Coating Boxes with Creosote and Tar (Inquirer).—The fumes of creosote and also of gas tar are very injurious to vegetation, and if these are the articles employed on the boxes we do not consider they would be suitable even for such strong rooted plants as Tomatoes, whilst the fumes given off would injure their somewhat tender foliage. We have found such to be the case, and on the other hand, cutting boxes treated with creosote, and stood aside for a time till the volatile parts or fumes were parted with, answered their purpose satisfactorily. Likewise, boxes treated with Stockholm tar and sufficient creosote to thin it for readily applying with a brush have proved innocuous to plants placed in them, the smell being allowed to pass off before using the boxes. We use, however, a mixture of linseed oil and Stockholm tar for oak tubs, and of Stockholm tar and paraffin oil for deal boxes, and find no evil results. The oils are used to the extent of rendering the Stockholm tar workable with a brush in a similar manner to other paints.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. (W. T. C.).—1, A seedling from Blenheim Pippin; 2, Winter Majetin. (B. E. W.).—1, Wellington; 2, Bramley's Seedling; 3, unrecognisable from specimen sent, possibly a local variety.

Names of Plants.—We only undertake to name species of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (J. L. S.).—*Choisya ternata.* (E. F. J.).—1, Berberis aristata; 2, Retinospora plumosa; 3, Berberis Darwini. (B. W.).—*Lycaste Harrisonæ.* (G. D.).—1, Asplenium bulbiferum; 2, Adiantum pedatum; 3, Selaginella Kraussiana. (C. E. C.).—1, Rhododendron Gibsoni; 2, R. hirsutum. (A. A.).—1, Dendrobium Wardianum; 2, Odontoglossum crispum; 3, Dendrobium fimbriatum; 4, Odontoglossum Pescatorei. (M. B.).—*Rubus spectabilis.* (J. C.).—Rhododendrons are florists' flowers which can only be named by comparison in a large collection. (H. G. T.).—A moderately good light form of *Lælia purpurata*. It is not a trouble but a pleasure to assist our subscribers.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Secretary, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—Secretary, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

COVENT GARDEN MARKET.—APRIL 20TH.

FRUIT.

			s. d.	s. d.				s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	...	...	1	6 to 4	0	Grapes, lb....	...	...	2 0 to 3 0
Cobs ...	...	...	21	0	2 6	Lemons, case ...	...	...	11 0 14 0
Filberts, 100 lbs.	...	...	0	0	0 0	St. Michael's Pines, each	...	...	2 6 5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz....	1 0	0 0	Parsley, doz. bnchs....	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	6 0	Salsafy, bundle... ..	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzonera, bundle ...	1 6	0 0
Cucumbers... ..	0 4	0 8	Seakale, basket... ..	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms 1 ...	0 6	0 8	Turnips, bunch... ..	0 3	0 4

PLANTS IN POTS.

		s. d.	s. d.			s. d.	s. d.			
Arbor Vitæ, var., doz.	...	6	0 to 36	0	Ferns, var., doz.	...	4 0 to 18 0			
Aspidistra, doz.	...	18	0	36	0	Ferns, small, 100	...	4 0	8 0	
Aspidistra, specimen	...	5	0	10	6	Ficus elastica, each...	...	1	0	7 0
Azalea, per doz.	...	24	0	36	0	Foliage plants, var., each	...	1	0	5 0
Calceolaria, per doz.	...	8	0	12	0	Genista, per doz.	...	8	0	12 0
Cineraria, per doz.	...	6	0	9	0	Lilium Harrisii, doz....	...	12	0	18 0
Dracæna, var., doz.	...	12	0	30	0	Lycopodiums, doz.	...	4	0	6 0
Dracæna viridis, doz.	...	9	0	18	0	Marguerite Daisy, doz.	...	6	0	9 0
Erica Cavendishi	...	18	0	30	0	Mignonette, doz.	...	6	0	8 0
„ hyemalis, per doz....	...	9	0	15	0	Myrtles, doz.	...	6	0	9 0
„ various, per doz.	...	12	0	24	0	Palms, in var., each...	...	1	0	15 0
Euonymus, var., doz.	...	6	0	18	0	„ specimens	...	21	0	63 0
Evergreens, var., doz.	...	4	0	18	0	Pelargoniums, scarlet, doz.	...	4	0	6 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2 0	to 4 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Arum Lilies, 12 blooms ...	3 0	4 0	Myosotis, dozen bunches...	3 0	6 0
Asparagus, Fern, bunch...	2 0	4 0	Narciss, dozen bunches ...	1 0	3 0
Azalea, dozen sprays ...	0 6	0 9	Orchids, var., doz. blooms	1 6	12 0
Bouvardias, bunch ...	0 6	0 9	Pelargonium, doz. bnchs.	6 0	9 0
Carnations, 12 blooms ...	1 0	3 0	Polyanthus, doz. bunches	1 0	1 6
Daffodils, doz. bunches ...	2 0	6 0	Primroses, dozen bunches	0 9	1 0
Eucharis, doz.	4 0	6 0	Roses (indoor), doz....	0 6	1 6
Euphorbia jacquiniæflora,			„ Red, per doz.	2 0	4 0
per bunch	1 0	2 0	„ Tea, white, dozen ...	1 0	2 0
Gardenias, doz....	1 0	3 0	„ Yellow, doz. (Perles)	1 6	4 0
Geranium, scarlet, dozen			„ Safrano (English doz.	1 0	2 0
bunches	4 0	6 0	„ Pink, dozen	3 0	6 0
Lilac (French), bunch ...	3 6	4 0	Smilax, bunch	2 0	3 0
Lilium longiflorum, 12 blms	4 0	6 0	Tulips, dozen blooms ...	0 3	0 6
Lily of the Valley, 12sprays	0 6	1 0	Violets, dozen bunches ...	0 6	1 0
Maidenhair Fern, dozen			„ Parme (French),		
bunches	4 0	8 0	bunch	2 6	3 6
Marguerites, doz. bunches	3 0	4 0	Wallflowers, doz bnchs...	3 0	4 0



A FORTUNE FOR SOMEONE.

It has been said, and with perfect truth, that larger fortunes have been realised by what appeared trivialities than by great undertakings. Some little implement or tool, or some improvement on an existing implement—a thing used by the million, catches on, and the inventor's fortune is made. Sometimes, of course, the invention or improvement is the work of years of patient toil; sometimes, again, it is the happy inspiration of the moment. We do not know who first introduced tinned food, but a trade has now sprung up. Everything lends itself to the process—fish, flesh, vegetables and fruit—and it is marvellous how excellent are the results. Milk, too, is prepared and preserved, and thus keeps good for an indefinite period. We always think milk must have presented many difficulties, but these seem to have been successfully overcome, and the most delicate babies are reared, not direct from the cow, but direct from the tin of condensed milk—indeed we have found it assimilated when other kinds could not be retained on the stomach.

So far, so good; but with all our ingenuity we are still wanting in one thing—we have not yet found out a really good method of

treating the homely egg. We depend on the daily supply. Like the manna of old, it has to be sufficient unto the day; but, alas! our hens do not look at the matter in that light, and often fail us in our greatest need. When the garden is full of ripe luscious fruit we do not feel so much the need of a good egg supply; rather do we look for them when the summer is over and past and our daily meals are a trifle monotonous. At present all good things come at once—fruit, vegetables, young meat (lamb, veal and chickens), and eggs by the hundred.

We just glance down the list of Saturday markets (in north and mid-England) and see the prices ranging from sixteen to nineteen eggs for 1s., cheap food for the million; but, alas! for the poor producer, how he gnashes his teeth and looks from side to side for a more remunerative market. Why should all these eggs, so good and really valuable, be hurled on to the market at once?

And then come the days of famine, or rather weeks, when eggs get to eight for 1s. We want some readjustment somewhere, but up to now no adequate means for preservation has been discovered. We think there must be some way out of the difficulty, for surely eggs are not so difficult to deal with as milk. They do not take a taint so easily; they are so effectually protected that they cannot be made the vehicle for the spread of disease, and yet so far they baffle the chemist and the inventor.

Of course, as no preserved milk can equal in flavour and bouquet the warm, rich fluid freshly drawn, so neither do we expect preserved eggs to equal the newly laid; and yet to how many varied and excellent uses could these eggs be put where their age would be no bar to their use! Every good housewife has tried her hand at this attempt to meet, as it were, the months of famine, and innumerable are the recipes passed down from mother to daughter.

Of course, a careful woman will, in most instances, be assured of a measure of success; but, alas! we want some method that will do for the million whose zeal is perhaps greater than their judgment, and that method has yet to be found. The egg is a delicate and valuable food enclosed in a shell more or less porous. The action of the air on the edible portion soon causes serious deterioration, and therefore something must be provided which effectually excludes the air. Say eggs are put away now not to be used till October or November, that means preservation for six months.

The Germans have been trying a series of experiments, and the results obtained are very instructive. The eggs were put away for eight months, and then brought out and tested with the following results:—

- I.—Eggs preserved in salt water all uneatable, salt having penetrated the shell.
- II.—Wrapped in paper, 80 per cent. bad.
- III.—In a solution of salicylic acid and glycerine, 80 per cent. bad.
- IV.—Rubbed with salt, 70 per cent. bad.
- V.—Preserved in bran, 70 per cent. bad.
- VI.—Covered with paraffin, 70 per cent. bad.
- VII.—Varnished with a solution of glycerine and salicylic acid, 70 per cent. bad.
- VIII.—Put in boiling water fifteen seconds, 50 per cent. bad.
- IX.—In a solution of salicylic acid, 50 per cent. bad.
- X.—Varnished with waterglass, 40 per cent. bad.
- XI.—Treated with a solution of alum, 50 per cent. bad.
- XII.—Varnished with collodion, 40 per cent. bad.
- XIII.—Covered with lac, 40 per cent. bad.
- XIV.—Varnished with sward, 20 per cent. bad.
- XV.—Preserved in ashes of wood, 20 per cent. bad.
- XVI.—Treated with boric acid and waterglass, 20 per cent. bad.
- XVII.—Treated with manganate of potassa, 20 per cent. bad.
- XVIII.—Varnished with vaseline, all good.
- XIX.—Preserved in lime water, all good.
- XX.—Preserved in a solution of waterglass, all good.

The three last tests came out well, but even these leave a good deal to be desired. Varnishing with vaseline is too tedious a process, it means so much handling, and the difficulty will present itself to any thinking mind how to insure that every atom of the shell be covered. As one leak will sink a ship, so one pore unstopped admits air, and all the work is undone.

Well, as to lime water, our own experience makes us doubtful on the matter. Sometimes they come out all right and good (the white

is always a little watery), and at other times the yolk is set perfectly hard and ball-like. No lime-preserved egg is ever fit to boil, and often where the most care has been taken there is always a more or less strong flavour of lime—most undesirable in so delicate a food.

Whether waterglass will ever become a popular mode of preservation remains to be proved. It is a substance of which the majority of us know little. Waterglass is an alkaline silicate, which dissolves in water. In appearance it is like a thick sugar syrup. It can be bought at 10s. or 12s. per cwt., and is used in proportion of one to ten. The water should be previously boiled, and mixed with the waterglass when cold; the mixture should then be poured over the eggs, which are packed in a vessel, till the topmost ones are perfectly covered.

It is absolutely necessary to see that the eggs so preserved are perfectly fresh, and free from the slightest soil or stain.

WORK ON THE HOME FARM.

We are rejoicing now in typical April weather, shower following shower at exceedingly short intervals; the rain is doing wonders to all kinds of vegetation, and we are regretting that the nitrate of soda which should have been benefiting the Wheat is still unapplied through delay in delivery.

The rain is driving the horses off the land as regards harrowing and cleaning operations, so we must turn to the yards which are very full of manure and get out what will be required for the Swedes. The Mangold land is ready for ridging, and if ridged up the first fine day will then be ready for its share of the muck. Too much of it can hardly be applied for Mangold if the weather be moist and the manure solid, and it must be good for Mangold to do well; light strawy manure only helps the land to dry out during a drought, and does little good to the crop.

We have lightly rolled the Potato ridges, and shall ridge them up again with a one-horse earthing plough. This will do much to preserve a good tilth, and will tend towards economy when weeding time comes.

The mention of weeding reminds us that Wheat is growing fast, and where any hoeing is required it had be better done at once; where Wheat is thick and strong with little twitch in it a good harrowing will answer all the purposes of hoeing, but where Wheat is foul with twitch or thistles the hoe must be used, and, after this date, the earlier the better. So far, we hope this is not going to be a thistle year, as there are very few showing their heads above ground as yet.

We referred above to the manure used for the Swede crop. We do not intend to infer that manure is necessary for Swedes; in fact, when the heavy cost of carting and spreading farmyard manure at the busiest time of the year is fully taken into account, we are convinced that unless the land is clean enough to manure during the winter it is most economical to use the farmyard muck either in July upon seeds for Wheat or upon any land suitable for Oats or Potatoes, as for the latter crops the carting and spreading could be done during the winter season.

Some farmers, perhaps, may say that if we are always trying to do all the work in winter when the days are short, the result may be not what we are aiming at, but we have never found too much spare time on our hands at midsummer, and if all the work be done, what more suitable time is there for the farmer to take a holiday, and who shall say that he does not deserve one?

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1898. April.		Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun		On Grass
		inchs	deg.	deg.		deg.	deg.	deg.	deg.	deg.	inchs
Sunday	10	29.759	54.5	52.0	S.W.	46.9	58.6	48.0	86.1	45.6	0.038
Monday	11	29.790	53.4	48.9	W.	47.0	59.8	46.2	103.3	40.9	0.160
Tuesday	12	29.618	44.9	42.9	N.W.	47.1	56.9	42.2	98.3	42.2	—
Wednesday	13	30.062	49.2	45.1	S.W.	45.9	59.1	36.4	100.2	30.4	—
Thursday	14	29.891	53.1	46.6	S.	46.5	59.8	44.1	84.7	38.9	0.115
Friday	15	29.769	48.2	46.2	N.W.	47.1	60.1	45.8	109.9	44.7	—
Saturday	16	30.035	49.3	45.0	N.W.	47.1	61.1	35.6	96.6	32.2	—
		29.846	50.4	46.7		46.8	59.3	42.6	97.0	39.3	0.313

REMARKS.

- 10th.—Overcast morning with spots of rain; wet from 1.30 to 2.30 P.M.; bright sunshine after 3.30 P.M.
 - 11th.—Overcast morning; sunny at times in afternoon; slight showers in evening.
 - 12th.—Rainy till 9 A.M.; overcast morning; generally sunny after noon; fine night.
 - 13th.—Alternate cloud and sunshine throughout.
 - 14th.—Generally overcast, with frequent spots of rain, but an occasional gleam of sun; showers at night.
 - 15th.—Showery till 4 A.M.; sunny from 9.30 A.M., and brilliant afternoon.
 - 16th.—Brilliant early; cloudy at times in the day.
- Temperature slightly above the average, but a very normal week for the season.—G. J. SYMONS.

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Journal of Horticulture.

THURSDAY, APRIL 28, 1898.

THE JOURNAL OF HORTICULTURE can be obtained from the Office, 12, Mitre Court Chambers, Fleet St. London, post free for a Quarter, 3/9. Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.

FRUIT BLOSSOM.

IF the hardy fruit crop in the summer and autumn could be measured by the blossom of trees and bushes now, the yield would be prodigious. But there can be no such reliance. An extraordinary profusion of blossom is not by any means synonymous with a corresponding abundance of fruit. If it were thousands of trees would be borne down with their load, and this of little value because of the clustered branches, and consequently trashy products, while the resources of the soil would be wasted and the trees enfeebled by the strain of their crushing burden. Overwhelming crops, however, need not be anticipated. They may follow, or they may not. No one knows; but one thing is certain—if one tenth of the blossoms with which trees innumerable are now densely covered were to set, and the fruit allowed to swell, the crops would not possess half the value that the yield would if the fruits were half the number, and consequently twice the size. Cold winds, frosty nights, and dry soil are not favourable to the setting and swelling of fruits.

The extensive fruit plantations in the Thames Valley and elsewhere are now veritable pictures of chaste beauty. Plums and Cherries are simply heaped with myriads of silvery blossoms, and Pears are like mountains of snow. Apples, as a rule, seem equally laden, or overlaid. This applies to young trees and to old that are in bearing condition. Many free growing trees are not allowed to be productive because of the senseless way in which the branches are cut back each year, resulting in a forest of crowded growths—to be cut back again. That is the way in which stupid people make and manage "pyramids," and not a few of these people, it is painful to say, pass through the world as gardeners. Their work of mutilation and fruit prevention is apparent here and there all over the country. A few of these tree trimmers, it is satisfactory to observe, are learning better. They are beginning to shorten the roots of exuberant trees to arrest growth, and thin out the branches to promote fruitfulness, instead of hacking them back yearly; but unfortunately some men are too wise in their own ignorance to be taught the better

methods that are practised by genuine gardeners and skilled cultivators with the best possible results.

It is not difficult by intelligent methods to train trees into habits of fruitfulness without impairing their health; but neither is it difficult to cover young trees with blossom before they are capable of bearing many clusters of fruit without constitutional—in many cases permanent—enfeeblement. There are at this moment thousands of young fruit trees in various parts of the country which have been planted one or two years, and their few long young branches either not shortened at all, or insufficiently, which are now wreathed with clusters of blossom, expanded, or approaching that stage. Almost every bud seems to have changed from a small leaf or wood bud into a blossom bud, including that at the end of each branch. If these blossoms are allowed to set fruit that will be the best possible way of making the trees, not free growers and increasingly healthy bearers, but practically useless chronic cripples.

All such precocious pigmies should be relieved of most or all their blossom trusses at once, and it is especially important to remove all terminal clusters, cutting the tips off the branches back to the most promising small wood bud that can be found, and failing its discovery to the cleanest and healthiest looking portion of the stem, for, if possible, forcing latent buds into activity. The primary object with such trees should be to obtain free growth, not bouquets of blossom. It is very easy by-and-by, as the trees gain strength, to turn them into valuable fruit producers.

Not only are many recently planted trees in the open, which were intended to develop into serviceable bushes or standards, in danger of being stunted, perhaps beyond recovery, by the transformation of growth buds into blossom buds, but there are also a large number of cordon trees intended to cover lofty walls, that will not reach the top for years, if ever they do, unless relieved of the blossom buds, which form a cluster at the apex. When such trees are permitted to terminate in a bunch of spurs, as many are, it is no easy matter to make them produce free extension growth. Every young cordon tree that is crowned with a cluster of blossom should have that cluster removed at once, with others immediately below it. The same remark applies to the side branches of espalier trees, as well as to trees that are intended to have their branches trained horizontally to walls, or the chance of their free extension will be extremely remote. We know of trees, not a few, of all the forms named that will never cover the wall space hoped for, or meet each other in lines of espaliers, if not assisted in some such way as suggested, and many of them must be cut very severely back indeed before anything like satisfactory growth can be expected. As a matter of fact they ought to have been cut back long ago, or perhaps better still, burnt. True, they cost little. They were called "cheap" trees, but actually worth nothing. They were worse than no trees at all, as occupying and wasting space that might have been utilised with healthy, thrifty trees, combining free growth with fruitfulness.

We last week gave advice to a correspondent (page 358) on the management of a "stubborn Pear tree." It was a large tree when moved, and though it blossomed freely, it neither produced fruit nor made any growth. We do not know whether the tree was purchased, or removed from one part of the garden to another; nor does it matter. We suspected its state, and advised accordingly. Sample branches have now been received, and they are even worse than anticipated. They are indurated, attenuated, more or less contorted, with not a growth bud to be seen, every one of such buds having changed into blossom buds, and these so weak that not one flower in a thousand has sufficient vitality to set a Pear. Such trees as this, and there are numbers of them in the country struggling between life and death, can only be saved, if then, and made useful by removing entirely the weaker of the stunted branches, and cutting the more promising boldly back to more than two-thirds their length to the cleanest and most healthy parts, as if preparing for grafting. Then by concentrating the root force, such as it is, on the shortened parts and syringing frequently in dry weather, latent buds may push, and the closer the pruning the more likely will they be to do

so, and produce healthy growths. We experimented with some trees in the direction indicated four years ago. They are now as healthy as could be desired, having made excellent growth, whereas if they had been left alone they would certainly have died.

Some people are so fond of a bargain that they rejoice in the possession of big, stunted, nursery stagers full of blossom buds, for half a crown each, whereas they would have to give 2s. for trees not half the size, and with not a tenth in number of blossom buds on the clean young branches. Such purchasers are satisfied they have got the best of the vendor in the transaction, but nothing is more certain than that the vendor has got the best of them in getting the large-topped and few-rooted moribunds off his hands. It is pleasant to see a good display of bold blossom on healthy trees, but pitiable to observe so many trees in a comparatively infantile state so cruelly overlaid, that they can, if left unaided, be little better than stunted starvelings the remainder of their days.

We have lately had the pleasure of visiting two fruit gardens—one of them mainly experimental, the other commercial. The former is Chiswick, where the same varieties of Apples on different stocks are, with trivial exceptions, all growing and blossoming alike. There are dozens of young Apple trees, and not a man in England capable of determining which kinds of stocks half of them are on. Their healthy branches are all alike wreathed with blossom. The fine pyramid Pears, as well as cordons on walls, are crowded with blossom. Plums and Cherries on walls are white as sheets; but a valuable collection of young Plums, planted by Mr. Barron and grown as bushes, have been denuded of nine-tenths of their blossom buds by what sentimentalists describe as that "friend of the gardener," the sparrow. With favourable weather Chiswick will be full of fruit, except Peaches. The terrible blizzard on Boat Race Day settled the blossom on wall trees as completely as Oxford settled Cambridge; while the prolonged continuance of a dense fog, when the trees under glass were in bloom, brought down the blossoms. One late-flowering tree was not in bloom during the reign of the fog fiend, and the blossoms of this tree are setting freely.

The other fruit "garden" visited was that of Mr. Edwin Ellis in Surrey. It comprises about 80 acres, and as viewed during blossoming time from a commanding point on the high saddle-like ridge that runs through it, and looking down the deep valleys on either hand, the four sharply sloping sides occupied by standard Plum and Apple trees rising above an undergrowth of bush fruit—chiefly Gooseberries—the scene was such as could not in its way be seen elsewhere. It was an undulating cloud of silvery blossom in a setting of tender green. A plantation of young Pears on the ridge presented a mass of blossom—by far too much, and if a tithe of it sets there will have to be a severe thinning of fruit. The soil is of a sandy nature, and rain with cloudy nights urgently desired.

The effect of root-pruning in arresting the extension of growth buds, and thus transforming them into blossom buds, is strikingly apparent in a new plantation of a few acres of young Apple trees, the trees having been thinned out of the larger area. They had been cut back twice or thrice after planting, for increasing the requisite number of branches, and these allowed to extend. The necessary shortening of the roots in the removal of the trees caused the buds to change, and each branch is now clothed with blossom from base to summit. There has been no summer pinching or any such manipulative process, and none was, or is, needed for making healthy Apple trees fruitful. It is a case of the thin disposal of the branches in summer, so that the sun can shine between them, and arresting the roots if growth becomes exuberant. It is easy to change small, pointed leaf or wood buds into bold, oval-shaped blossom buds; a far more difficult, if not impossible task, to effect a change the other way about, and make stunted trees, which produce nothing but blossom, and the attendant whorls of leaves, healthy growers and prolonged bearers of first-class fruit.

A welcome change in the weather occurred on Tuesday, and if milder weather follow the refreshing rain that was so greatly needed, fruit prospects will be materially improved.

LAWNS AND ALLIED SUBJECTS.

(Concluded from page 327.)

CROQUET GROUNDS AND BOWLING GREENS.

THE revival of croquet some three years since leads one to infer that this game will win its way to a measure of that favour accorded to it thirty years ago. Unlike lawn tennis, it does not necessitate a specially prepared space in the form of a parallelogram for its exclusive requirements, although all that is essential in the matter of a thoroughly even, well-kept sward for tennis playing, is equally applicable to the space upon which the croquet hoops are to be pitched. Within the kept grounds surrounding an English home, and in the more immediate vicinity of it, one or more portions of the lawn embracing those features of comparative privacy and pleasing surroundings can be at a minimum of expense adapted to the purpose; but, needless to say, such will be upon those parts of the lawn where little deviation from the level, natural or artificial, obtains. The extent of the portions devoted to this will, as a rule, be not less than 60 feet by 50 feet, and may, according to circumstances, considerably exceed that. Given a good level plateau with scrupulous attention paid to its keeping, particularly in the way of a good grass-collecting machine being used, little remains to be said beyond that an occasional vigorous use of the birchbroom may be given with advantage; the object being that the balls should run clean in damp weather.

The bowling green in the form of a sunk panel is now rarely to be met with, yet serving, as it can be readily made to do, the dual purpose of that which its name implies and a skating rink on a small scale, one wonders that it is not more in evidence. Owing to the bowling green being seldom requisitioned for its legitimate purpose, excavating to the orthodox depth of 30 inches may in most cases be considered unnecessary, half of that depth being probably sufficient. If this is made either in the form of a parallelogram or an oval embracing an area sufficiently large for croquet playing, and for which purpose it is eminently adapted, given the congenial surroundings of groups of Rhododendrons or other ornamental plants of a similar nature, it forms a pleasing and characteristic feature in the *entourage* of the kept grounds. With due provision for the inlet and outlet of water during winter, when the shallow reservoir formed by the sunk panel is converted by a few degrees of more or less continuous frost into a safe medium for the enjoyment of skating, the so-called bowling green commends itself, I think, for consideration to those who would, in every sense, make the most of their pleasure grounds. Granted that the water supply from a higher level is at hand, the small amount of engineering necessary to convey it to and from the bowling green, with the provision of plugs obviously necessary, presents in most cases little difficulty. Outlets at the sides must be provided to carry off surface water, and in excavating into what may be an uncongenial subsoil, the remarks previously made upon its unsuitability to the growth and maintenance of health of the finer grasses, are especially applicable.

Grass steps partake, perhaps, more of the ornamental than useful in character, and may wisely be regarded from this point of view, for where continued use renders them unsightly something more substantial may well be employed. Yet if more space were afforded in constructing them than is often given much of this might be obviated. Some little difficulty is often experienced in their formation. In the worst case I had to deal with the best results were obtained by building up the steps with ordinary turves packed face downwards strata upon strata to the required depth, the whole being well watered and beaten as the work proceeded, the rising part of each step being cut with a sharp verge-cutter to a slight angle inclined inwards. After being thus consolidated and properly shaped a sprinkling of rich compost was given, and sheets of turf as large as it was possible to handle formed the cover to the whole, being gently but firmly beaten into position. A broad flight of steps thus formed were as solid and satisfactory after ten years use as at their creation, although it must be added that workmen were, as a rule, prohibited from using them.

MOWING.

Modern methods of mowing lead one who can look back prior to the lawn mower coming into general use to conclude that we have gained a great deal, but lost something. Young gardeners, to whom the scythe is an antique implement, can scarcely credit the possibilities which lay in it when wielded by skilful hands, and practically they have no opportunity of comparing the new order of things in this respect with the old. I, at least, from my own experience now regard scythe mowing as a lost art, and regret that it is so. Taking a broad view of scythe *v.* machine mowing, the best methods appear to be those where the scythe is brought in as an auxiliary to the machine. For instance, the first mowing of the season, which may well be delayed until a fairly good growth of grass has taken place, should be done with the scythe, and a thorough sweeping and rolling given to

the sward. Such measures are not only invigorative to the grasses, but cleanse and pave the way for good machine work to follow. Wherever I have been located, and whenever it was possible during the family's absence to allow old lawns to grow freely until it was necessary to resort to the scythe to make them again amenable to the machine, it was done, and proved decidedly beneficial. However, as previously inferred, the garden labourer of to-day, as a rule, chops and hacks and scores in every direction but that of success in the endeavour to practise what he has never learned, and what few gardeners are now qualified to teach.

If it is admitted that few can now perform creditably with the scythe, the conclusion is generally arrived at that most garden workmen can use a machine. In a sense only is the latter true, for the intelligent workman who, understanding the anatomy of his machine, works in sympathy, if it may be so termed, with it, can alone do justice to its mechanical capabilities. As there are workmen and workmen, so are there machines and machines, all good in their way, but variously adapted to the purpose. In conjunction with this phase of our subject may be taken the various methods of machine mowing. On the larger scale, and with a large extent of comparatively level surface, the horse-power machine is, of course, *facile princeps* in its working, but with undulating and obstructed ground (by planting in any shape or form) the insistence of its use as a saving of labour is, I believe, a mistake, and often detrimental to good effect. The good work done by 16-inch hand machines, and the ease with which the lighter makes of them can be propelled, leaves little to be desired or attained in that direction. After the preliminary clearing of the sward by scythe mowing and sweeping, I see no reason why what is known as the American method—viz., allowing the machine to scatter the grass instead of collecting it—should not be resorted to; that is, when the mowing is done with uninterrupted regularity, weekly, or even bi-weekly, when the grass is in the full flush of growth.

On the choice of machines there is less to say than on the use and abuse of them. Cheap machines there are, of course, answering perfectly for the limited requirements of villa residences, which are ill adapted to the continual strain imposed by almost constant working. My experience tends to the preference of a machine with high driving wheels, and this will be found almost a necessity in the case of mossy lawns of a yielding nature. A good workman will make himself acquainted with all parts of his machine, and take the opportunity afforded by a wet day to thoroughly clean and overhaul it, readjusting to that nicety essential to its satisfactory working. In selecting a machine it should not be overlooked that its life can be prolonged by being able to renew the worn parts when necessary; hence a proper understanding with the vendors, that such can be obtained when required, will prevent a disappointment not infrequently met with when fashions change, and each season sees new patterns on the market, although the improvement may be questionable. Whilst advocating "the American method" of distributing instead of collecting the cut grass, the grass-box must be considered as indispensable in the mowing of the tennis and croquet grounds, and where possible, it may be also worth repeating, that a daily run over with a machine specially kept for the purpose is indubitably the best economy.

It is still an open question as to the matter of oiling the cogs of the driving wheels, one experienced workman I am acquainted with never doing so, and applying very little to the bearings. As a rule, far too much oil is applied to the lawn-mower, and the end of easy running is defeated by an accumulation of grease and dirt. My humble friend alluded to above has, by a little attention to details and intelligent practice, reduced his mechanical mowing to a fine art, and there are few, if any, better examples to be seen of the lawn as it should be, a well kept lawn, that grand feature of English gardens.—SYLVA.

HARMFUL AND HARMLESS GARDEN MOTHS—19.

THOSE birds which largely supply their young brood with insects, especially grubs and caterpillars, thereby meriting our gratitude (which they do not always get), may be observed very busy amongst trees and shrubs, also in low herbage or grass. Probably they pick up their prey more rapidly on the trees, but from low plants they obtain some of the juiciest caterpillars. There is frequently a migration amongst insects after winter. Caterpillars living near the ground in autumn seek food upon twigs and branches in spring, and many that have begun existence high up, attain their maturity by feasting upon the herbage of the new season.

Amongst the Noctuas this is often the habit, and their fat caterpillars are lucky if they escape birds and gardeners, beside insect foes, to hide while in chrysalis beneath the soil; even then they may be dug up to be devoured. Gardens sometimes produce specimens of the double dart, or *Noctua augur*, in its various stages. The greyish

brown moth flies in June, and the young caterpillar feeds a little while later, then hibernates till April. It is taken just now on Hawthorn hedges and plants growing near them, a very smooth caterpillar of purplish brown, with two narrow waved stripes, and some small white spots, but it is not abundant enough to be mischievous. Akin to this is the caterpillar of the moth called the double spotted square spot (*N. triangulum*), which feeds during April and May. In the autumn it eats the leaves of Bramble or Sallow; the spring food is varied. It is partial to Primroses and allied species, occasionally it helps to clear off common weeds, such as Chickweed and the Lamiums. The moth is rather handsome, having well-defined markings in shades of brown and buff. Sweets attract it about midsummer, and it is reported from all parts of Britain.

Sallows and Willows of several kinds are not unusually planted in or near gardens, and they supply food to several stout-bodied species akin to the two named above, their caterpillars consuming the foliage, but, should they fall off, they sometimes change their diet. We may take from some Sallow at the end of April the caterpillar of the purple clay (*Noctua brunnea*), which rolls into a compact ring when touched; it is velvety, brown, marked with black and white. The moth is also brown, delicately marbled and banded, having two conspicuous white spots. A much lighter moth, very variable in colour and pattern of wings, is oddly called the ingrailed clay, or *N. festiva*—the Latin name has perhaps an allusion to its appearance at the height of the summer season, when Nature displays her full beauty. April and May are the caterpillar's season; it hides amongst the twigs of Sallow, though is doubtless discovered by birds. It resembles the preceding, but is somewhat darker, having a few pale spots and pale feet. Much smaller, and quite of a different aspect, is the flame shoulder moth, *N. plecta*, so styled from a conspicuous whitish-yellow dash of colour along the edge of the brown upper wings; there is another dash near their base; the under wings are white. Woodruffs and other low plants supply food to the caterpillar, which is of dingy hue and slim-bodied, not easily perceivable when it is crawling or resting on the soil; it feeds during July, and is not uncommon.

The Hebrew character (*Tæniocampa gothica*) is a moth of spring, one that many gardeners have seen reposing by day on trees or walls at a time when such insects are abroad only in small numbers. One peculiarity is the mark on the purplish brown wings that suggested the English name; another is the length of the scales, which make the moth look woolly. Numerous garden shrubs furnish food to the caterpillar, which is full grown in June. Its strength of jaw is proved by its power to masticate tough leaves, such as those of some evergreens. It is of brighter colours than many of its relatives, being delicate apple green, with a broad stripe along each side of pale green, black along its upper edge, also three narrow stripes of yellow. Early in appearance, too, is the clouded drab (*P. instabilis*), which flies during March and April, a comparatively harmless though abundant species; it visits gardens for the spring flowers, and occasionally deposits eggs on herbaceous plants, but trees are mostly selected. The moth is variable in colour and markings, though it always shows the two discoidal spots and a well-defined pale line near the margin of the wings. In July the caterpillar is about; this is bright green, having a white collar, two indistinct stripes, and numerous dots, also white.

The pretty and delicately formed blossom underwing (*T. miniosa*) looks ill-fitted to face the rough winds and showers of the season when it emerges. Its upper wings have a beautiful band of red on a reddish-grey ground, and the under wings are pinkish and shiny, reminding us of the petal of some flower. This moth occurs chiefly in the South of England. The food of the caterpillar is Oak and Hawthorn; from a hedge of the latter it will sometimes descend, to feed on low plants near. At first it is sociable in habit, parties of about twenty living on a twig under a silken web. When it gets to be an inch long this is rather a showy caterpillar—velvety, the head spotted, and the body marked with pink, white, yellow, and black.

Moths, as a rule, do not congregate—that is, those of the same species, though a troop of various species, large and small, often hovers round the Willow bloom at dusk; but the moth called the Dismal (*Orthosia Upsilon*) has been seen flying near the tops of trees in a shrubbery by scores, or even hundreds, on a July evening. Is it possible they are attracted to the twigs or branches by the sugary secretion of some one of the aphid species? Sombre is its colour, as the popular name implies; on the wings is a figure resembling the Greek capital letter, which suggested the scientific one. When a lad I was walking along the Thames, not far from Kew Gardens, and popped my head into a hole in a Willow tree; to my surprise I found it lined with rows of brown caterpillars, which were evidently those of the above moth. It is their habit to hide during the day singly, or in companies sometimes, under loose bark, in holes, or amongst grass; and after dark they mount to feed, being full-fed towards the end of May.

We come now to a couple of cannibals. The parent moths are not,

perhaps, frequent visitors to gardens, yet we look upon them as, in a sense, our friends; one of the species is in particular, because it is fond of pursuing and killing the caterpillar of that common pest, the winter moth. This is the variable moth known as the dun-bar, or *Cosmia trapezina*, specimens of which show different shades of grey, red, or brown, but always have a bar and two spots. It flies in July, and the chrysalis from which it emerges then has a fine bloom upon it, resembling what we see on some Plums. The caterpillar is abundant in May. It has a stoutish body and small head; is dull green, having five yellowish stripes and numerous black warts, each in a white ring. Oak, Birch, and other trees afford it green food; but small caterpillars are its frequent victims, and of all it prefers those of the winter moth, which have no chance against it, seldom escaping by strength or speed.

The satellite (*Scopelosoma satellitia*) is a larger moth of reddish-brown, with dark lines and white spots. It is a March species, the eggs being laid then on various trees and shrubs. Presumably it eats leaves sometimes, but chiefly subsists on other caterpillars, not even sparing its own species. It is brownish, rather velvety, and striped on the back, living partly concealed under leaves drawn together with silk. Out of this retreat it comes forth to seize passing caterpillars, and if one be handled it exhibits great activity. Occasionally in May these caterpillars quit the trees, and eat leaves or seek prey amongst herbage below. There is also an emergence of the moths in October.

Towards the close of autumn, amongst the species visiting the flowers of Ivy for their honey, or imbibing sugar from the berries of the Yew, is the beaded chestnut, or *Anchocelis pistacina*, a moderate-sized moth, of varying shades of grey and brown, but having the wings crossed by lines, which give the appearance of network. We see this moth in gardens, because the caterpillar feeds sometimes on grasses; but it is also partial to the species of *Ranunculus* or Buttercup, and has been taken in May in cultivated kinds, keeping out of view by day. It is green, striped and dotted with white, the rings showing yellow skinfolds when it crawls; it makes a very compact earthen cocoon for its change.—ENTOMOLOGIST.

PROFITABLE FRUIT GROWING.

(Continued from page 341.)

PRIOR to turning to the second portion of my paper dealing with Grape and Tomato culture, I should like to summarise a few of the most important points that I have placed before you, and which, in my opinion, go to make up success in profitable fruit culture. First, you must have a love for your work, and put your whole heart into it, paying strict attention to every little detail. Begin by making the foundation sound, spare no pains in providing a right rooting medium for your trees—whether they be choice hothouse or outdoor fruit—when you get this, and the abundance of feeding roots that will result, take care of them. Feed well, mulch well, and water well; never dig about them with a spade, but keep the soil firm.

These hints are as applicable to the private gardener as to the market man; and as most of my hearers belong, I believe, to the former class, I may be told that it is all very well to say do this and do that, and do it at the right time, but you must know that in a private place there are a hundred little things that crop up and keep one from doing what they would. Well, I quite believe that. I also quite believe in the maxim, "Where there's a will there's a way." I will point out one little item in your yearly routine of work, which, if altered, would give you more time to do many more needful things. I refer to the common practice of washing all pots before potting, and the method of crocking them by broken pieces arranged into various sizes. I would undertake to transfer 1000 plants from 3 to 5-inch pots in less time than I have seen it take to wash and prepare with crocks a like number of pots. Cinders riddled from the furnaces, or gravel, not only make a more perfect drainage, but the operation can be done in quarter the time. In many places where much pot work is done, the loss of time through this one item alone must be considerable. Clean pots are not necessary for healthy growth. We have grown many different kinds of plants during the last eight years, and never once have washed the inside of a pot, nor ever once found any inconvenience through the balls sticking to the sides; nor could I ever detect the slightest difference in the health of plants potted in clean or dirty pots. I have seen, in one of the largest private places in this country, where every conceivable kind of plant usually grown under glass was potted in this way, and better plants I have not seen anywhere. The saving in this case, for this seemingly trifling item alone, would not be less than £100 per year.

GRAPE AND TOMATO GROWING.

These two go well together. Most houses intended for Grape culture for market have a full crop of Tomatoes the first year, and so on in lesser extent for a few years, until the Vines occupy most of

the space. No other crop of which I know is so suitable or so profitable for this purpose, and perhaps it is owing to this that so many Grapes are grown and prices are at such an unprecedentedly low figure.

I think the clearest and most intelligible way I can lay before you the most important points in connection with the successful culture of these two fruits is to give the details of practice followed in a house where first Tomatoes and then Grapes were grown, and better or more profitable crops of either I have not since met with. This plan will at least have the merit of a faithful record of facts—not theory.

The house in question was a low span-roofed structure, 150 feet long by 15 feet wide. The ground had a fall from both ends to the centre, and the house was built to this rake, which made the water in the gutters run to the centre, where it was collected in a large tank running across the full width of the house. This tank was 3 feet broad and 2 feet deep, and was made by excavating the soil to the required depth, the surface being left a little higher than the level of the surrounding soil. A 4-inch brick wall faced with cement was all that was necessary. Being a wet summer this tank was sufficient for the requirements of the Tomatoes, and I am confident had not a little to do with the ultimate success of the crop. Rain water is the best for all crops. The house was heated by a flow and return 4-inch pipe on each side, or four rows in all, and ran north and south—an aspect I consider best for most crops, especially in Scotland. It was built on part of a field of old pasture. The soil was on the old red sandstone formation, with a hard bottom. It was of good quality, but shallow—less than 12 inches brought the hard red till. The turf was all taken off the inside and a strip outside 2 or 3 inches thick, as it was required for other purposes.

The soil, without any admixture whatever, was simply dug over, but not deeply—4 or 5 inches at most—and the Tomatoes planted. These were brought on in a little forcing house, built to one end of the Tomato house. They were sown in the ordinary soil of the field, with a little leaf mould added. As soon as the seedlings were through the ground they were placed close to the glass, and when large enough were potted singly in 3-inch pots. For this and the subsequent shift into 5-inch pots, nothing was used but loam. As soon as they took to the 3-inch pots, the house was given more air and kept cooler, and the plants placed as near the glass as possible. When ready to plant out, they were thick, sturdy plants, with dark green leaves, and the pots a perfect network of roots. A little fire heat, but only a little—pipes never allowed to be hot—was kept on until the end of May, when it was discontinued until the middle of August. Abundance of air was given on all favourable occasions, and never at any time after the plants were established was the top ventilator quite closed.

The growth at first was slow—so slow, in fact, that it was feared the soil lacked something required by the plant—but, though not gaining much in height, they were thickening in the stems, with broadening leaves of a rich, dark green colour, and rooting freely. They were so sturdy that they stood without support until 2 feet high. Soon the first trusses began to set, and things looked brighter. Up till this stage no stimulant or fertiliser of any kind had been given but rain water, and that rather sparingly. Now a mulching of cow manure was laid all over the border, given a good watering, and covered about 2 inches thick with fresh soil, and made firm. In a few weeks this mulch was one mass of roots, which spread on the surface in some places in a perfect thicket. Trusses of fruit were now setting thick and fast, and so close were they together that in many cases the fruit of the one overlapped the other, many of the bottom trusses having to be kept off the ground by pieces of wood or stone. Another top-dressing similar to the first one was given, well watered, covered with soil, and made firm, which was again soon filled with roots. Afterwards, the feeding was given in the form of a few light dressings of Thomson's Vine and plant manure, and abundance of water when required. The style of training was the single stem, and the plants were set out about 2 feet 6 inches apart each way. At this distance they did not crowd, so no leaves were shortened or removed until they showed signs of decay in the autumn.

The first fruit was gathered about the middle of July, and the last the middle of February, a period of seven months. There was not more than 20 lbs. small, or second quality fruit in the whole crop. They were considered the finest Tomatoes placed in the market they were sent to up to that time, and realised an average of 10d. per lb. wholesale. The average weight of fruit per plant was a little over 11 lbs. This is one way of growing Tomatoes, and it is the way I would strongly advise beginners to start with.

Another way is to grow them with more heat and richer soil. This to a certain extent must be adopted to get early crops, and though heavy crops of fine fruit are often got in this way the risks of failure are greater. It takes more experience and attention, as much forcing does not agree with Tomatoes. The stronger, quicker made, and weaker growth of the plant under this system renders it more susceptible to the attacks of disease than when grown in the hardier and

more natural way I have indicated. An overdose of water at the roots, or the temperature allowed to fall too low—especially at night—will often bring on some of the many troubles to which this plant is subject.

As to the most suitable kinds of soil for Tomatoes, they have been found to do well in many, but a heavy stiff loam gives the best results with least labour and expense, and the worst soil, or the worst rooting medium, is a deep, light loose soil, which, if at all dry, is almost sure to end in failure.

The Tomato delights in a dry airy atmosphere, and it is a good plan to mulch early with manure. Care must be taken, however, never to use fresh manure charged with much ammonia, as I have known several cases where the plants lost nearly all their foliage by this, even though the ventilators were left open. As to varieties, I think there is more in the growing than in any particular brand or strain. Often the same kinds will come quite differently in the various soils and systems of treatment. I have seen seeds sown from a perfectly

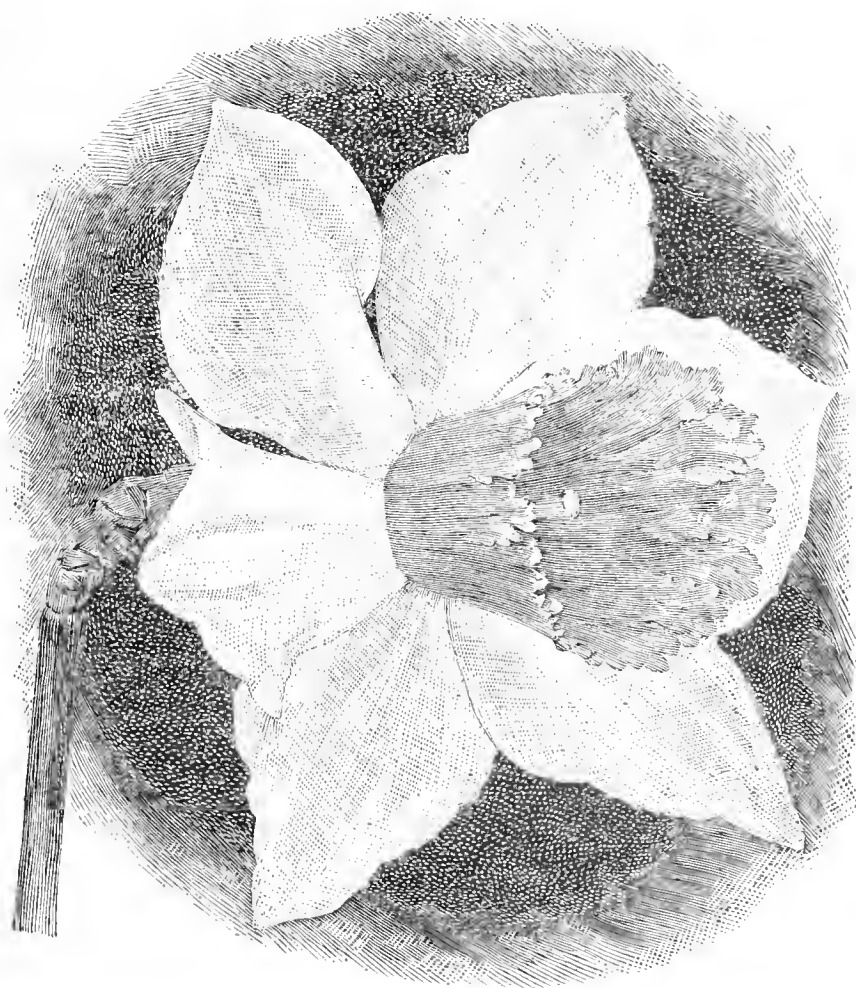


FIG. 70.—NARCISSUS WHITE QUEEN.

smooth round fruit, and the produce as rough as clinkers from a furnace. I may state that the variety grown in the house I have described was mostly Sutton's Perfection, and for cool treatment in firm fresh soil I know of no sort that can beat this for a heavy crop. It is not, however, so good a setter in older soils or with much forcing. The best that I know of for this purpose and the first setter I know is Austin's Eclipse. Another good variety is Ham Green Favourite. This with Comet, which is now largely grown for market, is a sufficient and reliable selection for anyone to have.—D. BUCHANAN.

(To be continued.)

NARCISSUS WHITE QUEEN.

THE success that has been achieved during the past few years by the Rev. G. H. Engleheart as a hybridiser of Narcissi has been well maintained so far during the present season. At the Drill Hall on the 12th inst. he annexed the only three first-class certificates given by the Narcissus Committee, and two out of the four awards of merit. One of the handsomest of his flowers was White Queen, of which we give an illustration (fig. 70). It was one of the three that gained the higher honour. As may be seen, it is much in the character of the well-known Sir Watkin, but it is distinct from that universal favourite in colour and slightly in form. The broad perianth segments are glistening white, and the short, broad trumpet pale or sulphur yellow. The whole flower is of great weight and substance, and if it prove as good as Sir Watkin after longer trial anyone will be safe in predicting for it a great future.



ROSE SHOW FIXTURES IN 1898.

- June 15th (Wednesday).—York.*
 „ 16th (Thursday).—Colchester.
 „ 23rd (Thursday).—Bath (N.R.S.).
 „ 25th (Saturday).—Windsor.
 „ 28th (Tuesday).—Southampton,† Sutton, and Westminster (R.H.S.).
 „ 29th (Wednesday).—Canterbury, Croydon, and Richmond (Surrey).
 „ 30th (Thursday).—Eltham, Gloucester, and Norwich.
 July 2nd (Saturday).—Crystal Palace (N.R.S.).
 „ 5th (Tuesday).—Harrow and Hereford.
 „ 6th (Wednesday).—Farningham, Hanley,† Redhill (Reigate), and Tunbridge Wells.
 „ 7th (Thursday).—Woodbridge.
 „ 8th (Friday).—Ulverston.
 „ 9th (Saturday).—Manchester.
 „ 12th (Tuesday).—Wolverhampton.*
 „ 13th (Wednesday).—Ipswich and Newcastle-on-Tyne.*
 „ 14th (Thursday).—Halifax (N.R.S.), Canterbury (Hospital Fund) and Helensburgh.
 „ 21st (Thursday).—Sidcup.
 „ 26th (Tuesday).—Tibshelf.

* Shows lasting three days. † Shows lasting two days.

The next list of fixtures will appear early in May. In the meantime I shall be glad to receive the dates of any Rose shows, or other horticultural exhibitions where Roses form a leading feature, for insertion in that list.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

AMERICAN RAISED ROSES.

THE question is frequently put to me, Why are there not more American seedling Roses of merit raised? The reply to this may be given from several standpoints, two or three of the most important reasons being as follows:—

The first is, that in a general way the process from the fertilisation of the flower till the plants bloom takes too long for our ideas of getting the desired results. For proof of this we have only to turn to the Carnation and Chrysanthemum. Here it takes only a few months, six to nine at most, to determine what our efforts have produced, and as a result we have plenty of sterling varieties of both these flowers continually being offered. But with the Rose it is quite different, as it takes three or four times as long to get any indication of what the results are likely to be. Then if out of several hundred seedlings there should happen to be one or two that are promising on first blooming, it takes a much longer time to work up sufficient stock to give a fair trial to test the many desirable qualities, such as colour, size, free blooming, healthy, vigorous constitution, distinctiveness, and several other qualities necessary to make it worth putting on the market, and then when the raiser has satisfied himself on all these points it takes a still longer time to work up sufficient stock to enable him to offer it for sale.

This, of course, is presuming that the first blooms hold their characteristics good continuously, which often happens to be the reverse, then a double disappointment is the result. This long waiting and often final failure to obtain the desired result deters many from trying again after their first attempt. On this score it may not be out of place to mention the fact that many seedling Roses do not show their full character the first time of flowering; often the most promising at the first are the most disappointing later on, and others with less attractiveness on first blooming turn out much better with further acquaintance. Thus there is always a great amount of uncertainty attached to it which deters many from taking up this branch of our business that otherwise would and could do so with great advantage to horticulture.

The next factor in this case is that so few of our rosarians in this country feel they can afford the time necessary to pursue the subject with that minute detail and study necessary to make it a success. This is particularly true of the commercial florist generally. No one, I think, will dispute the fact that this class of men have all they want to do to manage their business successfully and pay their way, having no time for indulging in anything that does not promise quick returns.

But this does not apply to many amateurs who could, if they would, take up the raising of seedling Roses, and find a great amount of pleasure in the occupation. I do not mean by this that anyone with just enough knowledge of horticulture to know what a Rose is could do so; but those who have made a study of flowers for their own pleasure, and who often become expert judges of the different qualities necessary in any flower, could select the parents having the best developed qualities, which, when blended, would produce the best and most distinct forms desired.

No country to-day offers the inducement that ours does for anything that is really an improvement in Roses. The field is a broad one, and those having the time and means to devote to the subject need have no fear of over-production, or of not finding in our Republic an appreciative people willing to endorse a really good thing, even though it be a queen.—JOHN N. MAY (in "American Florist").

[We did not know that even in America Carnations and Chrysanthemums could be raised and flowered in six to nine months after fertilisation was effected.]

APRIL CHARACTERISTICS.

APRIL is one of the most interesting of all seasons, because it is essentially the period of hope. It has been described—not without expressiveness—as “the month of smiles and tears.” Of late the latter have greatly predominated, most fortunately for the horticulturist; for previously, while frost prevailed during the night, the strong sunlight could only do damage among his treasures during the day. Then the vegetative capability of Nature was dormant; now, since the rain has fallen so beneficently, the fair green earth has visibly gladdened, and millions of Daisies, with “silver crest and golden eye,” are brightening the fields. In the glens and by the waysides those wild flowers that make late spring so attractive are beginning to appear. The blossoms of the Gorse are marvellous in their varying golden colours, reminding me instinctively of the beautiful hue of that queen of Noisettes, the *Maréchal Niel* Rose; and the Blackthorn is assiduously pouring forth daily its far-shining masses of snow-white flowers. I do not know if, within the boundaries of Nature, it would be possible to find fairer revelations than these.

Our gardens also, even at this early period, have much fascination. We are already on the confines of the bloom of the *Auricula*, one of the most fragrant attractive of all flowers, and the charming *Lily of the Valley* is gradually unfolding, in sheltered recesses, its capabilities of growth. *Narcissus ornatus*, contemporaneously with those great Daffodils, *Sir Watkin* and *Horsefieldi*, is flowering earlier than usual this year. A highly effective companion of these, by reason of its brightness, is *Narcissus odoratus*, also called the *Campernelle Jonquil*.

On many fruit trees there is already an abundance of blossom, especially on certain varieties of the *Almond* and the *Plum*. The *Cherries* also are covered with flower buds, almost ready to expand. The *Irish Peach Apple* is already revealing the bright colour of its flowers, while *Duchess of Oldenburg* is almost equally advanced. Rose trees, so long retarded by late pruning and the influence of the frost, inspired by genial rains and consequent mildness, are beginning to exhibit their brightly coloured shoots. *Oriental Lilies*, particularly such forms as *Lilium giganteum*, *L. auratum*, *platyphyllum*, and *L. Henryi*, are growing with great rapidity; while *Browni*, *Szovitzianum*, and *Washingtonianum* have not yet appeared. But their period of activity will soon be at hand.—DAVID R. WILLIAMSON.

HINTS ON POTTING.

POTTING, or giving fresh soil and increased root room to plants, is divided into two well-defined methods—namely, repotting and potting on. The former method is carried out when plants do not require larger pots, but yet need fresh soil or clean drainage.

Palms, numerous Ferns, Zonal Pelargoniums, and many hardwooded plants, the rooting medium of which may have become sour, occasionally need turning out, the roots examined and pruned to healthy parts, old inert soil carefully picked away, as well as choked drainage, afterwards placing the plants in similar sized pots. In some cases, however, turning the plants completely out of the pots may not be necessary or convenient, but simply the loose inert soil dug out down to the roots, filling up the space with fresh material. This is termed top-dressing, and is adopted chiefly where roots are not abundant in the surface soil, or where the loss of a few along with the impoverished material is not of much consequence. The added soil should be pressed firmly down. Top-dressing is effective for clearing the surface of mossy growths which accumulate by repeated waterings.

All softwooded plants in small pots, and needing to be increased in size, must be potted on as a fair quantity of roots reach the sides of the pots and begin to appear through the drainage. *Fuchsias*, *Pelargoniums*, *Begonias*, *Tomatoes*, and *Chrysanthemums* all require special attention at this season, in order that the plants do not become root-bound, until they have reached the size pots in which they are to flower.

There are a few small but important details to be attended to when potting which help largely in insuring the success of the operation. Before proceeding to pot any plant into a larger size it is imperative that the roots and soil be moist, but not wet, so that the soil is sticky and greasy, rendering it unsuitable for the operator to handle. Plants to be potted, therefore, should be examined some hours previously, watering those well which may be dry.

The compost for potting is the next consideration. It must be composed of the various ingredients required in their proper proportion, and when the materials are properly mixed the whole ought to be in a sufficiently moist condition. If afterwards it becomes dusty and dry before it can be used sprinklings of warm water and several turnings will restore it to a healthfully moist state.

The fresh pots to which the plants are to be introduced must be thoroughly clean and dry. Plants in a young state requiring several shifts, specially need this attention, as in pots that are dirty inside, the young roots will adhere so fast that a difficulty will be experienced in turning the plants out with unbroken roots, which is injurious if the balls of soil and roots have to be dragged from the pots.

The crocks employed in draining require also to be clean and dry. The crocks ought to be carefully placed in the pots, and not more numerous than absolutely necessary, some quick-growing plants only needing one well placed crock over the hole of small pots. The amount of drainage in larger pots does not depend on the quantity placed in, as upon its systematic arrangement, for effectiveness. These details are applicable without exception to all plants when potting.—E. D. S.

THE ROYAL GARDENERS' ORPHAN FUND ANNUAL DINNER.

THE annual dinner of this charitable Institution was held, as announced, at the Hotel Metropole on the evening of Wednesday, the 20th inst. Fully a hundred sat down, and amongst other gentlemen well known in the horticultural world were Sir Trevor Lawrence, Bart., and W. Marshall, Esq., Mr. J. Smith of Mentmore, Mr. M. Gleeson of Stanmore, Mr. Geo. Wythes of Syon, Mr. H. J. McLeod of Dover House, and Mr. Geo. Reynolds of Gunnersbury Park, with the genial Curator of Kew, Mr. Geo. Nicholson. English botanists were represented by Mr. W. B. Hemsley of the Kew Herbarium, and the trade by Messrs. N. N. Sherwood, M. J. Sutton, L. Sutton, P. Kay, T. Rochford, H. B. May, H. Turner, E. M. Seegar, H. J. Jones, R. Cannell, and P. R. Barr. Chas. E. Keyser, Esq., of Aldermaston Court, Reading, presided.

After the viands had been properly discussed the Chairman rose to propose the usual loyal toasts of "The Queen" and "The Prince and Princess of Wales and the rest of the Royal Family." Her Majesty, he said, was interested in everything that interested her subjects, and he thought, therefore, that horticulture had a special claim upon her. The Princess of Wales, their Patroness, was probably the most popular lady in the land next to the Queen. The Prince astonished everyone by the amount of work he got through, and indeed the whole of the members of the Royal Family did their best to identify themselves with all classes of society. He hoped that loyalty would long be a characteristic of Englishmen.

These toasts having been done due justice to, the Chairman again rose to propose the toast of the evening—"The Royal Gardeners' Orphan Fund." He said he felt some diffidence in coming amongst them that evening as their Chairman, seeing that he was following a number of eminent noblemen and gentlemen. His audience, too, knew fully as much concerning all matters connected with the Fund as he himself. They knew it was started in 1887 in commemoration of her Majesty's Jubilee, and that there were now funds invested to its credit amounting in value to over £10,000. The work accomplished by the Fund was an estimable one, for it was charity in the best sense of the word, those who had been fortunate in horticulture combining to alleviate the distress of those who had been unfortunate, thus often enabling the mother of a family, in the absence of the breadwinner, to tide over the critical time. He thought the Fund was not so well known as its sister society, the Gardeners' Royal Benevolent Institution, but he hoped to see its sphere of influence much enlarged in the near future. He coupled with the toast the name of Mr. N. N. Sherwood, their esteemed Treasurer, who had been connected with the Association from the commencement.

The toast having been cordially received, Mr. N. N. Sherwood rose to reply. After thanking the Chairman for associating his name with the toast, he said that they had much to be thankful for, since the Fund had met with a considerable share of prosperity from its inception. He regretted to say, however, that last year the annual subscriptions showed a slight falling off, and he made a strong appeal to all to open their purse strings. He suggested that the children of noblemen and gentlemen owning large estates should be encouraged to save for the Society, the money thus obtained going to establish funds to be called after the name of the houses from which they came, or of the children supplying the money. He hoped to see in the near future all the orphans who came up for relief elected, and that they would not have to turn some of them away as they were obliged to do now.

The toast of "Gardeners and Gardening" was proposed by Mr. Martin J. Sutton, who coupled with it the name of A. W. Weeks, Esq. He said that his own province was agriculture, but he was sure that farmers would have to take a lesson in thorough and careful cultivation from the gardeners if they were to make their land pay. Mr. Weeks responded, and paid a high tribute to the uprightness and trustworthiness of gardeners. They were, he said, often entrusted with goods to the value of many thousands of pounds, and yet he had never known a dishonest gardener. He thought this was largely due to the fact that their employers treated them well.

Mr. Marshall invited the assembly to drink to the health of their worthy Chairman, who had honoured them with his presence that evening. No half-hearted response was made to this, and Mr. Keyser, when he rose to reply, received another cordial greeting. He assured the company that he felt it an honour to be there, for he took a deep interest in everything relating to gardening. He had given his representative at Stanmore (Mr. M. Gleeson) and his representative at Aldermaston (Mr. A. Galt) the opportunity of showing what they could do in competition, and he had done this with a view to help the grand exhibitions of horticultural produce now to be seen in this country. In conclusion, he assured them that he should not be satisfied unless his efforts brought in an accession of interest to the Society, and thanked them for their kindly reception.

"The Press" was proposed by Mr. R. Dean, who endeavoured to impress upon his hearers how much the Society owed to the horticultural press in particular. He coupled the name of Mr. Geo. Gordon. That gentleman, in replying, averred that the horticultural press was unanimous in endeavouring to assist the Fund, and they had felt it to be their duty to keep its claims persistently before the public. He called attention to the revenue that might be obtained for the Society by holding concerts and dedicating the proceeds to the good cause.

When the evening's subscriptions were announced it was found that they amounted to £515 in all. Included in this total there were, besides a large number of smaller sums, large amounts from the following sources:—C. E. Keyser, Esq., £116 16s.; N. N. Sherwood, Esq., £58 14s.; Mr.

G. Reynolds, £32 18s.; Mr. Assbee, £63 6s. (including £5 from Mr. Rochford, £5 from Mr. M. J. Sweer, and £5 from Mr. J. Walker); Baron A. de Rothschild, £10 10s.; N. M. Rothschild, Esq., £26 5s.; M. J. Sutton, Esq., £25; L. J. Sutton, Esq., £25; A. W. Sutton, Esq., £5; S. M. Seegar, Esq., £19 19s.; A. W. Weeks, Esq., £16 5s.; W. Robinson, Esq., £10 10s.; Mr. H. J. McLeod, £10 16s. 6d.; Mr. J. B. Stevenson, £6; Dicksons, Ltd., Chester, £5, and Mr. H. J. Adams, £5 5s.

Mr. Keyser subsequently announced that a number of his friends to whom he had made appeals were abroad, and he hoped to be able to obtain from £50 to £100 more than that subscribed, which statement was received with much applause.

During the evening some capital songs were contributed by Miss Gertrude Snow, Miss Emily Foxcroft, and Mr. Herbert Schartau, whilst a humorous recital, given by Mr. Harry Hudson, was much enjoyed. The tables were prettily decorated with Daffodils and other flowers, furnished by Messrs. Barr & Sons, and other nurserymen. They were very tastefully arranged by employes of Messrs. Wills & Seegar of Onslow Crescent, S. Kensington.

The meeting broke up with a vigorous rendering of "Auld Lang Syne."

TOO MUCH OF A GOOD THING.

THIS proverbial saying is doubtless admitted universally. Nature provides bountifully the yellow colour in flowers, and I should think somewhere not far from one-half of all "wild flowers" are yellow, and most flowers are "wild" somewhere. By administering artificially to this copiously existing colour, as we do with a vengeance in Daffodils, we seem to get too much of a good thing, and some balance is necessary.

Has anyone seen an attempt made in the naturalisation of flowers on principles to repress the uniformity of yellow shades? Everybody knows Daffodils, but not one in a hundred knows *Anemone apennina*, the original pretty blue variety, obtainable at a ridiculously low price by the hundred and thousand. It will increase naturally, and does not want disturbing for a generation, if ever; simply leave it alone. To see it flowering on sunny days in April is truly delightful wherever naturalised in masses. Such should be placed among Daffodils, when I feel sure of the extreme satisfaction that will be provided. Plant in September-October, and where ground is heavy, place the dry tubers in some sandy mixture. There is the white variety besides, *A. a. alba*, of newer introduction, and equally pretty.

After yellow we have white, blue, and red flowers following naturally in this order of frequency. It is sometimes possible to improve upon Nature, and hence the suggestion. If the unsurpassable and brilliant crimson *Anemone fulgens* be placed among *Anemone a. alba*, the result might charm many flower-lovers. For other charming blue flowers to associate with the preponderance of Daffodils, we must not forget *Scilla sibirica* and *Chionodoxa Lucilæ*.—H. H. R., *Forrest Hill*.

FLOWER AND GARDEN PICTURES AT THE NEW GALLERY.

BEING at the New Gallery on the Press Day, I could not but be struck with the very large proportion of the exhibits which have to do with gardens and flowers. Thus in No. 11 Miss E. Stewart-Wood has a pleasing picture of wild Roses; and at No. 32 Mr. Alfred Parsons, A.R.A., has what is unquestionably one of the gems in the Gallery in his picture of Sweet Williams, wherein we are introduced to a pathway, in which the sun shines through the bushes and flowers which bank each side. The picture is marvellously true to nature, and one of the best of its kind ever exhibited. At No. 45 Mr. Anderson Hayne shows a very pleasant and solidly painted cottage garden; at No. 47 Mr. A. F. Hayward introduces the visitor to some red Chrysanthemums; and at No. 50 Mr. Toystan Hetherington has a capable picture of a garden in Surrey.

Under the title of "At Eventime they Pass Away," Mr. J. Fitz-Marshall at 53 shows a clump of *Convolvuli* just at the time when they are closing up for their night's repose. At No. 56, Mrs. Kate Pengini has the flowers that bloom in the spring; at No. 93 Mr. Gaetano Meo has a pretty and well-executed view of an old Devonshire orchard, redolent of cider Apples; at No. 131 Mr. Edward Clifford introduces us to the ancient garden of Moreby Hall, York, wherein we are thrown back, as it were, into the past century; at No. 133 Mr. Robert Bateman has a spray of Carnations, well executed, with the peculiar title of "Carnations and Love in a Mist;" at 138 Mr. A. F. Hayward has a picture of Chrysanthemums; while at 139 is a very satisfactory view of a garden by Mr. Arthur Lucas, and next is another very fine flower piece by Mr. Parsons, the subject being Larkspurs and Roses, which is an admirable companion picture to his Sweet Williams referred to above. At 144 Mr. A. F. W. Hayward has a nice collection of Japanese Anemones; at No. 151 Mrs. Nora Hartley has a group of Roses; and at No. 157 Mr. Lance Calkin gives us "In a Garden Gay."

Many will view with kindly interest the Church allotment, Suffolk, of Mr. Toystan Hetherington, shown at No. 166, and at 193 Mr. Bateman has the *Pæony* pictorially limned. At 204 Mr. Hayward has a group of Azaleas, which, with a view of a Paris garden, shown by Mr. Bernard Harrison at No. 315, which with a clump of Roses by Mr. Hayward at 425, completes the sum total of those pictures which may reasonably be expected to possess a particular interest for gardeners and floriculturists. Altogether the exhibition is a good one, and well worthy a visit.—WM. NORMAN BROWN.



WEATHER IN LONDON.—The second half of last week was much colder than the first portion. On each day the wind was somewhat searching, and occasionally a little wet could be felt in the air. There was a very heavy dew on Saturday night, and on Sunday the sun shone brilliantly, but it became cool again towards evening. On Monday it was cloudy and cold, but no rain fell, but on Tuesday the conditions were changed, and a welcome shower fell in the evening. On Wednesday it was dull and warm, but no rain fell up to midday.

WEATHER IN THE NORTH.—Seasonable, and occasionally very fine weather has marked the whole of the week ending on Tuesday morning. The 21st, and the former part of Sunday were delightfully pleasant. Showers have occurred throughout; the moist atmosphere and hazy sunshine have given a great impetus to vegetation, and the country has the appearance of mid May. The cuckoo and the swallow are reported from W. Perthshire.—B. D., *S. Perthshire*.

FRUIT TREES IN S.W. SCOTLAND.—In this district of Scotland there is at present a splendid display of blossom on Plum, Cherry, Almond, and Pear trees; and some of the Apple trees are already exhibiting their beautiful flowers. Among Plums, The Czar, the Early Rivers, and Denniston's Green Gage are especially impressive. It is evident that fruit trees have much benefited by their rest of last year, which was well earned after their memorable effort of the previous season. They were also greatly favoured by the comparative mildness of the winter and spring. At present atmospheric influences are extremely favourable to the development of the blossom into the fruit, brilliant sunshine alternating with soft and genial showers.—DAVID R. WILLIAMSON.

DEATH OF THE REV. H. G. JEBB.—We regret to announce the death of the Rev. Henry Gladwyn Jebb, of Firbeck Hall, which occurred at Sheffield on the 19th inst. For several years Mr. Jebb suffered much from his eyes, and had undergone operations with benefit. He came to Sheffield on the 13th inst. for further treatment, but unfortunately he had already contracted influenza, and succumbed as stated. Mr. Jebb was born in 1826, and was privately educated at Stamford. He proceeded to St. John's College, Cambridge, of which he was an exhibitor. He graduated B.A. in 1851, and M.A. in 1872. He was also F.S.A. Being an ardent student the deceased became acquainted with many distinguished men, and his travels abroad extended materially his sphere of knowledge. On several occasions learned societies have enjoyed his hospitality, and have been privileged to view some of the many treasures he was able to show. He was a man of high literary attainments, with a wonderfully retentive memory, and his knowledge of Shakespeare was remarkable. He was much interested in horticultural matters, especially Roses, as is Miss Jebb, who is a member of the National Rose Society. He leaves a widow, one son, and two daughters. His son is Mr. H. J. Jebb, J.P. The funeral took place at Firbeck on Friday.

FRUIT PROSPECTS AT LIVERPOOL.—Judging from present appearances we ought to have an abundant crop of fruit of all kinds this season, provided the weather keeps favourable for the next fortnight or so. Pears, Plums, and Cherries are in full bloom, and the pink of the Apple blossom now slowly unfolding is charming to look upon. We want warm showers, as the rainfall has not been over-abundant since the year came in. Fortunate are those who have been able to give some of their trees a copious supply of liquid manure previous to their coming into blossom, as this system only needs to be tried to see the beneficial results in the setting of a crop of fruit. Whilst making a journey through a portion of Cheshire a little more than a week ago I was much struck by the wonderful promise for Damsons. Along the hedgerows by the way-side and at the farmhouses the trees were literally laden with sheets of white such as is seldom seen, and as the Damson crop last year was almost the worst on record, it will be little short of a calamity if the supply of this delicious fruit should again be cut short by a spell of bad weather. Of course it is too early as yet to know the extent of the crop of various kinds of fruit, but I hope to be able to send a report later on.—R. P. R.

FLORILEGIUM HAARLEMENSE.—The excellence of this ornate work is splendidly maintained in the sixth number, which has just come to hand. The plates are beautifully executed, while the letterpress (in four languages) is clear and sound. The illustrations comprise Hyacinth King of the Blues; Tulips La Reine, Yellow Prince, and Silver Standard; and Chionodoxa Lucilæ and *C. sardensis*, with *Scilla sibirica*.

DEATH OF MR. J. S. ROBINSON.—We regret to record the death, on the 21st inst., of the above gentleman, who was so well known in Worksop and the neighbourhood. The deceased was only thirty years of age, and he will be much missed, not only as a sportsman, but for the keen interest he manifested in horticultural matters. One of the finest shows that has been held in Worksop was in grounds that Mr. Robinson lent, while he was also a believer in allotments, and let much of his ground for this purpose, both at Worksop and Nottingham.

A "LOAD" OF POTATOES.—In some districts Potatoes are sold by the load. Will you or any of your readers kindly give in your next issue what number of pounds there are in a load? and greatly oblige—E. C. K. [For anything we know to the contrary, a "load" may vary in weight in different counties, as a peck does; and if so, local custom must be adhered to. Ten sacks, of 2 cwt. each, represent a load in some districts, or 2240 lbs. Perhaps some of our readers may be able to supply information on the subject differing from that we have given. We know of Potatoes being sold at 14 lbs. to the peck, 16 lbs., and 21 lbs. respectively.]

WEATHER AND PROSPECTS IN GUERNSEY.—Since the notable storm we had on March 24th and 25th, Dame Nature has been on her best behaviour. After a steady downpour of rain, followed by sunny days, everything both indoors and out has made wonderful progress. A few parcels of Tomatoes have been sent away, and by the first week in May the crops will be ripening freely. Melons, Figs, and Grapes are also being shipped, and so far realising fair prices. Broccoli paid very well till the large consignments from Cornwall forced down the price in nearly every market. French Beans have paid well. Flowers also have been in good demand. Pear and Plum trees are in full bloom and promise a heavy crop. Grass is abundant, and the prospects of the season seems to be fairly satisfactory.—X.

GARDENING APPOINTMENT.—Mr. Alfred Bishop, gardener to Robert Burrell, Esq., Westley Hall Gardens, Bury St. Edmunds, has been engaged as gardener to Sir Humphrey de Trafford, Bart., Hill Crest, Market Harborough. It may be stated that Mr. G. A. Bishop received the notification of his acceptance for the position and of the Government appointment at Bermuda, as announced last week, at practically the same time, choosing the latter. His brother is accepted for Hill Crest in his stead. Some gardeners have difficulty in finding one situation, while Mr. Bishop, after long waiting, had the chance of two good ones at the same time. Really good men need not despair, though we know of some who find it weary waiting for positions which they could most creditably fill.

INTERNATIONAL HORTICULTURE.—I have been looking over the long and somewhat monotonous reports printed in the gardening press of the recent great horticultural show in Ghent. I do not say reading them, because to me, as to nine-tenths of readers, the reports have little special interest. Still enough was seen to show that whilst a grand International Show was held, yet there seemed to be in association with it very little of international courtesy of an official kind. Of course the British gentlemen who attended were most kindly welcomed and hospitably treated; that would be assured, but I could not gather that anyone of these were present as a representative of our Royal Horticultural or any other important horticultural society. Possibly no one was so invited. I do not know. Still it is difficult to avoid an expression of regret that such a gathering of continental horticulturists as was seen at Ghent had not been added to by some two or three official representatives of British horticulture. I notice that the President of the National Horticultural Society of Paris, so described at least, was present, although the title is rather a misnomer, and possibly it should have been of "France," to make the society national. In any case France was thus officially represented, and Great Britain was not. That seems to be matter for regret. It is not less matter for regret that great international horticultural shows seem to be held now only on the Continent, and not in Great Britain. Is it not possible for us to hold one in London at least once in ten years? Surely so long as there is the Crystal Palace, and its splendid area and grounds, there is a place unequalled for such a show in the whole world. Whilst there is yet time why not set about organising a grand international horticultural exhibition here, to inaugurate in 1901 the commencement of what may be, we trust, for horticulture the glorious twentieth century?—A. D.

— **IMPROVING HASTINGS.**—A winter garden will probably be one of the attractions at Hastings in the near future. It is proposed to erect a handsome building that will be capable of holding four thousand people; the estimated cost is between £30,000 and £40,000.

— **SOWING HERBS.**—A thought must be given to the culture of the most useful herbs, so that a supply can be obtained when any kind is asked for. Those which may be grown from seed sown now are Thyme, Sage, Marjoram, Summer and Winter Savory, Fennel, Rue, Balm, Wormwood, Horehound, and Hyssop.—E.

— **ROYAL METEOROLOGICAL SOCIETY.**—The monthly meeting of this Society was held on Wednesday evening, the 20th inst., at the Institution of Civil Engineers, Mr. F. C. Bayard, L.L.M., President, in the chair. Major H. E. Rawson, R.E., read a paper on "Anti-cyclonic Systems and their Movements." The Hon. F. A. Rollo Russell described the results of observations which he had made on haze and transparency during 1897. He found that the greatest clearness occurred with winds from the westward, and the least clearness with winds from the eastward. The highest mean visibility was twenty-four miles with west winds, and the lowest mean visibility was 10.6 miles with north-east winds.

— **NARCISSI VARIATIONS.**—Does the double white Narcissus incomparabilis, commonly called Orange Phoenix, revert to the double yellow, called Butter and Eggs? There were beds in my garden of both Sulphur Phoenix, Orange Phoenix, and Butter and Eggs. In course of transplanting the whole of what is now tallied Orange Phoenix turns out to be Butter and Eggs, but the Sulphur Phoenix has retained its form and colour. The old incomparabilis is unstable in form, the single coming sometimes double, and then reverting again to single. Orange Phoenix was probably a sport from the double yellow, and its loss here is possibly due to reversion, and not to careless transplanting. I should be glad to know the experience of others as to its constancy.—ROSS-SHIRE.

— **UNAPPRECIATED FELINES.**—At Woolwich, on Saturday, among the applicants for magisterial advice was a person who stated that he had half an acre of nursery ground surrounded by about twenty-five houses. The place was literally overrun by cats that destroyed everything that he tried to grow. His Dahlias, Chrysanthemums, and other plants were torn up by them nearly as soon as planted, and he wished to know what steps he could take to protect himself from their ravages. Mr. Paul Taylor: I have no control over cats (laughter), and I cannot suggest any remedy for your grievances. The applicant retired, evidently much disappointed at the magistrate's inability to help him.

— **WORKING HORTICULTURAL SOCIETY.**—At the commencement of the present year this Society decided to remove the radius limit, and admit to membership anyone who wished to join them. The result so far is satisfactory. New life and energy appear to have been infused into its members, judging from the monthly meeting held on Thursday last. The attendance was above the average, and great interest was taken in an admirable paper on "Hardy Flowers" by Mr. Scaplehorn of Messrs. Geo. Jackman & Sons. The exhibits staged for special prizes were numerous and of excellent quality, the principal one being for a collection of cut flowers. Mr. Needs gained the first prize with a beautiful display of *Lilium Harrisii*, *Narcissus*, and *Tulips* in such excellent form that the Judges awarded the Society's certificate in addition to the prize. Mr. G. Carpenter of Byfleet was a good second, a lovely bunch of *Maréchal Niel* Roses being admired by all present. Mr. J. W. Jones exhibited a beautiful collection of *Narcissus*, for which a certificate was also awarded.—VISITOR.

— **THE DEFICIENCY OF RAIN.**—A serious feature in the weather has been the great lack of rain, coupled with the presence of a very dry wind from the north-eastward. In London the total fall for the present month has been less than half an inch, or very little more than a third of the average for the time already expired. During the previous six months the total rainfall amounted to only 57 per cent. of the average, an unusually small proportion for so extended a period. In two months out of the six the total was considerably less than half the normal, while in one month (October last) it did not exceed one-sixth of the normal. In many other parts of our southern counties the weather since last summer has been quite as dry as in London, and in the rural districts the springs are in most cases alarmingly low. This month the western and northern districts appear to have fared better than other parts of the country. Over the North of England the rainfall has not been far short of the average, while at some places in the West it has been slightly in excess. In Ireland and some portions of the West and North of Scotland there has been a rather considerable excess.

— **WHAT THE SOUDAN PRODUCES.**—Here is an extract from a letter written home by a soldier now in the Soudan that helps us to realise something of the physical discomforts our men are called upon to endure. It was, says the writer, rather a different place from what he had expected. He thought the Soudan would be all sand and Dervishes, but he found that, although there were Dervishes about, the ground seemed to be made up of "one-third sand, one-third flies, and one-third fleas." It does not sound very pretty, but it is not far out. We think the Soudan would be an admirable place to test the efficacy of insecticides.

— **DOUBLE PRIMROSES REVERTING.**—There are conditions of culture or something else which seem apparently to induce some double Primroses to revert to the normal single form. Some thirty years ago there was put into commerce a lovely single crimson Primrose, then called *auriculæflora*. It had a golden centre, a thrum eye, and was perfect in form. This was found in a garden at Shirley, Southampton, and its origin was lost in oblivion. I regarded it as a reversion from the double form of the famous and beautiful double crimson. Later I met with a small reversion to single from the double lilac, at Feltham, but just recently I saw quite a stock of single reversions from that popular double at Hackwood Park, where every flower was a perfect single, and very beautiful too. The clumps were large, and had been growing beneath some Nut trees for several years. I have advised that these clumps be lifted, divided, and replanted on a north border, just to see whether higher culture may produce doubleness or not.—A. D.

— **OLD READERS AND WRITERS.**—I am very much obliged to you for your information re Sir Watkin Narcissus bulbs on page 314. May I say that you have very few older contributors to "our Journal" than myself? In my first number of the "Cottage Gardener" you have a supposed set-to with Miss Penelope Pomeroy about the Journal after the duty was taken off paper. I allude to August 20th, 1861. I suppose nearly all of your readers of those days have joined the majority, but I am pleased that "Upwards and Onwards" is still able to wield his pen. I have fifteen years of "our Journal" bound volumes, and since 1866 I have the whole of the numbers packed and tied in half yearly parcels. When I have occasion to look into the back numbers of the sixties I remember the pleasure I had in reading the letters of Messrs. D. Beaton, "D., Deal," George Abbey, W. Keane, J. Robson (who was a Northumberland man), "Nickerbocker," and many others. You are very welcome to publish this if you think well to do so.—G. C., pp. GEORGE CHARLTON, jun., *Morpeth*. [We like to hear from old friends. Many readers in the early sixties have naturally passed away, but we are glad to know that many still remain, including three of the writers mentioned. We hope our correspondent may have several half yearly parcels to tie, and that the junior will follow the good example of the senior in cherishing his "Journal."]

— **BEDDING DESIGNS.**—It is very apparent, from the pamphlet bearing the title at the head of this note, that Messrs. H. Cannell and Sons, Swanley, the publishers, will do all they can to prevent formal bedding from dying out. In the booklet which we now have before us sixty designs for beds are given, together with lists of plants that will be found suitable for each one. Several would come within the category of carpet bedding, while others embody suggestions for the spring and summer adornment of the flower garden. To those who wish fresh ideas for their bedding, the pamphlet, for which the firm charges 6d., should be of material assistance. Relative to the making and planting of carpet and other beds, Messrs. Cannell & Sons say, "The main thing in carrying out carpet bedding effectively is to decide on the design for next year, and prepare coloured drawing and plants accordingly. When the time comes for planting, dig deeply and tread down moderately firm; take all levels, and draw and stake out just the design required. First make sure of the centre, avoiding hollows, and if the lines are to be straight they must be exact, while if curved they must not have straight parts, neither must there be any sudden or sharp bends; avoid all these, or the whole beauty of the bed will be lost for the season. When planting make sure that the plants are as near one size as possible, for to a great extent the beauty of the bed depends on this regularity of arrangement. Be sure and provide sufficient plants, that they may be planted thickly, so as to give effect at once, particularly in the case of *Coleus* and *Alternantheras*—in fact, when sparingly planted they invariably prove a failure. As soon as the plants commence growing it will be necessary to clip or pinch all long straggling shoots away; after this comes the main thing—that is, every plant allowed to fill its allotted space and no more. The various lines must be kept well defined; should one plant be permitted to outgrow its neighbour, the whole will become confused and all beauty gone; therefore strict attention to trimming must now become the whole and sole point of making bedding attractive."

THE HISTORY OF THE SOILS OF THE BRITISH ISLES.

I OFFER for your acceptance some notes by my late father on a subject of which he had made a special study during his long term as head gardener at Belvoir Castle, with the hope that they may be of interest to the readers of the *Journal of Horticulture*. They are as follows:—

The vigour and complete development of a plant is due very much to the soil from which it has sprung. The plants we cultivate—whether for food, for economic, or decorative purposes—originated in soil more or less marked by fertility; the compact and impervious soils we call clay do not in their primitive state invite or support a superior race of plants, neither are such found in barren sands; we may thus learn our first lesson in the application of soils to cultural purposes, that a soil naturally fertile supplied the conditions that first promoted the development of those properties in a plant that made it valuable to us, and to secure its healthy progress we must in cultivating it continue to supply it with earthy matters that possess the constituents of fertility.

In treating of soils we have first to seek in the geological history of the country an explanation of their origin; and, secondly, information as to their general or local occurrence. The diversity in the character of the superficial covering of earth of this country corresponds with the variety exhibited in its rocky structure. In the comparatively limited area of the British Isles we have examples of nearly all the great geological formations of the world; we possess, therefore, advantages which do not belong to many other countries of similar extent.

Glancing at a geological map of the British Isles, we find a development of igneous rock, trap and granite, in the extreme north and south, some eruptive masses in the centre of the country, and more extensive examples in the west. Next in succession appear the Cambrian rocks in Wales and Cumberland. The silurian formation is represented in the elevated land of Shropshire and in Wales. The old red or Devonian has a considerable expansion in Scotland, Herefordshire, and Cornwall. The carboniferous, which includes the coal measures, extends from North Britain through Northumberland, Durham, Yorkshire, Nottingham, Leicester, Derby, and Wales. The permian is found in the north, traversing Northumberland, Durham, York, and Derby. The new red sandstone occupies a very important central position, extending from Hartlepool on the Tees to the Severn in Gloucester, and a less important development in the south of England. The oolite, in its several divisions, extends almost uninterruptedly from Whitby in Yorkshire to Lyme Regis in Dorsetshire. The Wealden, or fresh-water and estuary formation, is seen characteristically in Sussex. The cretaceous or chalk formations run along the borders of the north-east and eastern counties, from Yorkshire, and striking through Berkshire, Sussex, and Hampshire, with Dorsetshire form the South Downs. The tertiary formations—eocene, miocene, pliocene—are chiefly represented in Hants and Norfolk, and parts of Lincolnshire. The marsh-lands and drifts, and post tertiary formations, have their representative examples in Lincolnshire.

The great rock and other formations which we have thus cursorily enumerated must be looked upon as having primarily contributed all the mineral constituents of the soils now spread over the country. It will be seen that the depositary rocks of ages incalculably remote appear on the surface, and those of succeeding periods of time are also exposed more or less extensively. Had these great formations remained undisturbed in their profound depths, obscured by succeeding rocks superimposed in due conformity upon them according to their several periods of accumulation, the surface configuration of this part of the world would only exhibit the last result of time in fashioning its most recent depositary formation, which would then have presented a uniform expanse of clay or sand furrowed by streamlets.

Of the causes which produced the upheaval and disruption of the lower sedimentary rocks and the general disturbance and protrusion of the superincumbent masses it is not within the scope of our present work to speak or discuss; but it is necessary we should notice the fact that such disruption has taken place, thus making available the rich stores of mineral and other matters which would otherwise have been inaccessible. Volcanic forces were also at work, and at a period subsequent to some of the great changes resulting in the elevation of the land just adverted to great eruptive masses of igneous rock and narrower outbreaks of trap rock broke through the carboniferous and secondary formation, forming ranges of no mean altitude, and in their course of upheaval dislocating the strata through which the eruptive matter was forced. Succeeding this period of disturbance another, and in relation to our subject a most important change, occurred in the subsidence of this portion of the then Continent of Europe; this was coincident with a very considerable climatic depression of temperature.

The submergence was so considerable, that all, except the hills of

greatest altitude, were submerged; and their exposed summits, so marked was the cold, bore the characteristic snow and ice caps of the arctic regions. The history of soil is so involved in these great geological events, that it would be difficult to give an intelligible explanation of their occurrence and distribution without calling to our aid the revelations of the science of geology, and although our references have been to the past, the elements which have wrought such enormous changes on the face of the earth are still in action. The waves of the sea still beat and wash opposing shores; rain and wind, frost and snow, and the rushing waters of a thousand streams, still gather and transport the lighter particles of earth, forming beds of loam or alluvium, according to the positions to which it is carried; and, last of all, great earth throes still tell us of the existence of the pent-up forces that have heretofore and may again show us how unstable is the earth crust on which we tread.

Perhaps no period in the geological history of this country was more eventful in relation to our subject than that comprised in the time of the tertiary system of geologists, the divisional periods being described as eocene, miocene, pliocene, pleistocene, and post tertiary. There exists evidence of very considerable changes of climate during these periods, each climatic change fraught with events and marked by incidents that disturbed existing surfaces, and increased the deposits of earthy matter, the advantages of which reach us even at this time.

Great changes took place in the distribution of sea and land in those periods in the world's history. At one period of time shallow seas, thronged with forms of marine life, surrounded and washed the shores of islands which were clothed with a vegetation telling of warmth and humidity. Estuaries bearing the waste of the land formed deposits, in which were mingled the relics of creatures both of sea and land. Rivers, rushing in greater volume than we find in their modern representatives, formed deposits on a proportionate scale. Lakes, marshes, forests, each gave their characteristic portions of organic and inorganic results.

Another great change in the climatic and physical conditions of this part of Europe succeeded, and it was during a period called by geologists the pleistocene that the most striking and important events took place. Whether through the divergence of warm oceanic currents, or from other unascertained causes, a climate of arctic severity replaced the general conditions that heretofore prevailed. The land now forming the British Isles was partly overwhelmed by the ice-laden waters of a northern sea, and, sinking gradually, only the ranges of hills of greatest altitude remained above the waves.

The summits of these heights were heavily weighted with accumulations of snow and ice, and their rocky structures, acted upon by these and other atmospheric causes, was disrupted and displaced, and the fragments carried by icebergs, and thus dispersed over a wide area, to be found when the sea bottom became dry land, and utilised in building our palaces.

To any objection which may be raised that we are dwelling too much on the geological aspect of the subject, we venture to say that no just or intelligible account of soils can be given without direct reference to the facts revealed to us by the science of geology. If we described the preparation of a compost heap, by saying that a base of rough stone must be hewn from the quarry, gravel and sand from their beds, limestone, clay, alluvium, borrowed from their several deposits, the whole intermixed with decayed vegetable matter, the account would be accepted as appropriate. In referring to the causes in the far-off history of the world that on a large scale prepared and deposited the same material, we are detailing information equally applicable to the subject.—PERCY T. INGRAM.

(To be continued.)

BLACKS IN POTATOES.

IN reading the interesting and important controversy in the *Journal of Horticulture* on this subject, I especially remarked that "Experimentalist" might well have added to his quartette of old and high quality varieties at least two others—viz., Fortyfold and Early Oxford, possessing as they did the nutty flavour, and were also veritable "crack their sides," or "starchy customers," and though not particularly heavy croppers, or of large size, were altogether up to date. I have a vivid recollection of when in my "prentice" days, often enjoying with a canny Scot an early supper, consisting alone of the said "murphies," "a wee peckle of salt," and a "sup of milk." Boiled with their jackets on, there was no loss of the full flavour of these delicious tubers.

The foregoing remarks, be it observed, apply to upwards of half a century ago, and just prior to the initiation of the murrain, and which latter, I well remember, when in full career so decimated the crops throughout the land (I think it was in 1847), that their place was largely substituted by other roots, such as Carrots, Parsnips, and Swedes.

Regarding the "Blacks" question, it is indeed worthy of fuller investigation, though I opine it is a most difficult one to elucidate. With respect to Up to Date enjoying a presumed immunity from the "disease," such has not been my own experience, inasmuch as among the several samples that have come under my cognisance, especially during the past season, they have been more or less affected.—W. G., Birmingham.



CYPRIPEDIUM OLENUS BURFORD VARIETY.

THIS is one of the grandest *Cypripediums* that has been exhibited. Its size and the massiveness of all the organs place it in the front rank of the hybrids that have *bellatulum* as one of the parents. *C. Olenus* was shown in March, 1895, by Mr. H. J. Chapman, gardener to R. I. Measures, Esq., but it is quite superseded by the Burford Lodge variety which was staged by Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart. The flower is shown natural size in the woodcut (fig. 71), and is therefore about 5 inches across. The dorsal sepal is of immense size, the ground colour being white, almost pure at the margins, but nearly imperceptible at the base by the deep claret markings. Shining claret is the colour of the pouch and the base of the petals, which are blush white at the tips. *C. Olenus* Burford variety resulted from a cross between *C. bellatulum* and *C. ciliolare*, and was awarded a first-class certificate by the Orchid Committee of the Royal Horticultural Society on the 12th inst.

ODONTOGLOSSUM

ROSSI MAJUS.

IT is not my intention in this short note to go into details as to the merits of this easily grown and useful cool house Orchid. They are already well known to professional and amateur alike, but in visiting an amateur recently I could not fail to notice the superiority regarding the free flowering properties of plants grown on small blocks to those grown in pots, the flowers, too, being much larger. The blocks were made of teak wood, all the material used being a little sphagnum moss, which was held in position by copper wire. To those having to economise in the matter of space this system is to be recommended, as they take up small space, are easily dipped or syringed, and most certainly show their flowers to greater advantage than when grown in pots.—R. P. R.

ODONTOGLOSSUM CORONARIUM.

THIS is a very fine species when well grown, and though variable, not one of the varieties but that is well worth growing. In habit it somewhat resembles *O. grande*, but is looser, so to speak, not so tufted, and consequently requires larger receptacles to grow it well. Good plants may be grown in large flat baskets suspended not far from the roof in the cool house, when the light reaches every part of the plant, yet it is shaded from bright sunshine. The scapes appear in late winter, and are now in full beauty.

They are upwards of a foot in length, the colour of the flowers in the type being rich deep brown on the sepals and petals, this being

marginated with yellow. The lip is deep yellow with large brown blotches, and the flower has a glossy surface, as if varnished. Peat fibre and sphagnum moss, with abundance of large rough lumps of charcoal and crocks, suit it well as compost, the large fleshy roots taking hold of this class of material better than that of a finer closer character. Drain the baskets or pots thoroughly, and keep the plants in a cool, moist atmosphere all the year round. When strong enough they will bloom, but it can hardly be described as a free-flowering species. It is a native of New Grenada, introduced in 1847.—C. H.

[CÆLOGYNE PANDURATA.

A DESCRIPTION of this plant fails quite to give an idea of its beauty, and only those who have seen well-flowered specimens know what a distinct and beautiful thing it is. In habit it is very strong, the pseudo-bulbs occurring at several inches apart on the rhizome, and having several deep green leaves 18 inches in length on the strongest plants. The bloom spike contains many flowers, and these are upwards of 3 inches across, the sepals, petals, and ground colour of the

lip bright emerald green, the latter being beautifully crested, and otherwise marked with black, a very pretty combination, as striking as any in the genus.

As noted, the pseudo-bulbs are distinct, and this naturally causes the plant to soon grow out of the ordinary pot, basket, or pan. Many growers for this reason use long trellised rafts, very lightly dressed with peat fibre and moss, the roots taking hold of this, and the plants flourishing well. Tree Fern stems, again, make a splendid holding for the roots, the natural roughness of the material suiting them exactly, and the plants have a fine appearance thereon when in bloom. The pieces of stem should be as large as possible in the first place, for when once the roots get a hold they are bad to transplant.

There is nothing worse for this class of Orchid than the huge lumps of cork, with pieces of peat wired to them, that

were at one time popular. No matter how carefully placed, they were very ugly, and not only this, but the peat was always silting out over other plants, or on the stages and paths. This, too, led to the plants getting very loose, hanging by the roots as it were, looking untidy, and doing badly. It would be far better to plant in pans, and let them grow over the side, as they would, than to grow them in this way.

But a raft, or even a flat basket, is easily made, and should be used if the Fern stems are not at command. *C. pandurata* likes plenty of moisture at the roots while growing, and the atmosphere must also be kept moist. Sprinkling should not be overdone, but is very helpful in summer in keeping the foliage fresh. At all times, when growth is at all active, the roots must never be really dry; and when growing freely, almost aquatic treatment is necessary. When resting, the supply must be shortened a little, but to allow the pseudo-bulbs to shrivel is quite wrong, leading to weak, puny flower spikes, and badly developed growth. Still, little more water than is necessary to prevent this must be given during the winter months.



FIG. 71.—CYPRIPEDIUM OLENUS BURFORD VARIETY.

In its native habitat *C. pandurata* is found growing "in the hottest jungles on the banks of streams, where during the rainy season it is impossible to collect them," so that under cultivation it is hardly possible to keep it too warm and moist, as the habitat is in Borneo. Heat and moisture, then, are the first conditions necessary, and if the atmosphere can be well supplied with ammonia by sprinkling the floors and stages with soot water, or placing dry soot and lime about under the stages, the progress of the plants will be all the better. They will soon take on that deep green, almost black, tinge in the foliage that is indicative of health and vigour.

In the kind of atmosphere induced by these means there will usually be little trouble with insect pests, for thrips and red spider, though active enough in a hot dry atmosphere, are not at all comfortable when plenty of moisture and ammonia are present. But if either of these puts in an appearance, no time must be lost in setting about its removal, for the insects soon ruin the fresh green appearance that is the greatest attraction of the species. *C. pandurata* first flowered in this country in 1853 with Messrs. Loddiges of Hackney, about a year after its discovery. It takes its name from the shape of the lip, which is almost exactly that of a violin.—H. R. R.

FAIR DEVON—ENDSLEIGH.

GARDENS of note abound in Devonshire, and numerous able practitioners at the present time, as well as in the past, have furnished conspicuous examples of what British horticultural skill can accomplish as regards all the usual produce. But there are two characters which particularly distinguish the Devonshire estates, and arrest the attention of the traveller in every district. One is, that naturally picturesque sites furnish a most delightful variety in the scenery, of which the "Art that conceals Art" has taken the fullest advantage; and the other is the abundance of freely grown trees and shrubs, especially those of the evergreen type, which are seen in nearly every park and garden. As regards Conifers, perhaps there is scarcely a county in England that could show a larger proportion of handsome specimens of the best or rarest species. The temperature, rainfall, and soil are evidently exactly adapted to their requirements, and they luxuriate accordingly, notwithstanding that some of the tenderer occasionally suffer by frost in the late spring.

For early vegetables the gardens of Devonshire, both private and commercial, have long been famed, the climatal conditions being eminently favourable to such produce. But even in such a favoured county the late frosts are sometimes most disastrous, many a promising crop being decimated. An example of the evils thus experienced in regard to bedding plants, which gardeners in more northern districts are apt to think peculiar to their own localities, is afforded by the following, in which the writer is only recording what happened to many others: "In one season, a few years ago, I completed the bedding-out on June 16th, and on the following day half the plants were killed to the ground by frost." The full meaning of this can be duly grasped by those who have the whole resources of their establishment exhausted to provide accommodation for sufficient plants to fill large flower garden designs, allowing no space for reserve forces. In many of the counties around the metropolis it is customary to regard planting-out tender bedding plants as a risky proceeding until the third week in May is passed, and in low situations it may not be safe until after that; but the second week in June would be thought late. The instance given shows how greatly a garden is dependant upon weather conditions that cannot be foreseen, and from which the most skilful are liable to suffer as well as the careless or incompetent.

The River Tamar, which constitutes the boundary between Devon and Cornwall, presents in the charming valleys of the upper portion of its course numberless picturesque sites for gardens and estates. One of the best chosen and most delightful of these is that where Endsleigh Cottage is placed, the Devon residence of the Duke of Bedford, for while Nature has liberally endowed the surroundings with her greatest attractions, art has been employed with accurate judgment, and is in consequence nowhere obtrusive. The "Cottage" itself is an unpretentious structure, quite in keeping with the scenery, and, standing on a site slightly elevated above the Tamar, it commands a pleasing view of the river windings and the tree-clad hills on each side, at the same time serving to complete the picture.

Endsleigh is about six miles from Tavistock, and constitutes one of the attractions to visitors in this part of Devonshire. By the liberality of its owner the grounds can be inspected by all who take the slight trouble needed to procure a visiting order at the estate office in the town. The journey by road, too, is one of the most varied and agreeable in the neighbourhood, an extremely pleasant trip for a summer's afternoon. The carriage drive from the entrance to the gardener's house reveals one of the great characteristics of the place—namely, the wonderful vegetative vigour of the trees and shrubs.

Rhododendrons in particular grow with extraordinary luxuriance, necessitating frequent hard cutting to keep them within bounds, and it is not an unusual occurrence after a severe pruning for the plants to make growth 3 feet in length in one season. A large part of the plantation is formed of *R. ponticum*, but a collection of the best hybrids is also included,

as well as some of the finer species of the Himalayan group. *R. Falconeri*, for instance, one of the handsomest Rhododendrons in cultivation, succeeds uncommonly well, and has even been known to escape injury when *R. ponticum* and the common Laurel have been killed by frost. This is an interesting illustration of how much the condition of individual plants influences their injury by frost and other means; there is often a greater difference in this respect between individuals of one species than between distinct but allied species.

One of the best points to which visitors should direct their steps for obtaining a general view of the charms of the Tamar valley and slopes is the "Swiss Rock," where, from a little "coign of vantage" on a precipitous height some 200 feet above the river, a unique and delightful prospect is commanded. Upon the opposite or Cornish side the hills rise to a considerable height, heavily wooded; the river is seen winding its way at the base, broken here and there by its rocky course, and in the distance the "Cottage" stands out from a background of trees and shrubs, varied both in form and height. On the occasion of my visit the afternoon of a short but brilliant autumn afternoon was drawing to a close; the sun was sinking to the Cornish hills amidst wide-spreading reflections of the richest crimson and gold, producing an effect that would have tested the skill of the greatest landscape artist to transfer to canvas.

Humphrey Repton was consulted by a former Duke of Bedford with regard to some improvements in the Endsleigh estate, and he prepared a report which contained many interesting passages. From one of these the following may be quoted:—"There are hardly two things in Nature more contrasted than a river near its source in a mountainous country and the same river when it becomes navigable and spreads itself into an estuary like the Tamar at Plymouth. Nothing can be more delightful to those who have braved the storms of the ocean than to sail between the romantic banks of the Tamar, whose echoing rocks often repeat the music which from pleasure boats enlivens its peaceful surface; and a cottage on the banks of the Tamar will naturally suggest such tranquil scenery. Very different is that of Endsleigh. Here solitude embosomed in all the sublimity of umbrageous majesty looks down on the infant river struggling through its rocky channel and hurrying onwards with all the impetuosity of ungoverned youth till it becomes useful to mankind." To the view from the "Swiss Rock," in fact, the river imparts life, character, and relief, widely different from what a lake would afford in such a scene, or a placid river like the Thames at Richmond as seen from the Terrace.

Rich plantations of trees and shrubs extend along the hillsides to the "Cottage," and beyond, a detailed list of which would occupy more space than the Editor could spare or I should be disposed to fill. But reference must be made to some of the finest specimen trees, especially among the Conifers, the majority of which are so thoroughly at home. The Firs are represented by handsome giants furnished from the ground to the apex with vigorous branches and possessing the distinguishing tints of health. For example, *Abies Albertiana* may be noted, the height being nearly 60 feet, and numerous as are good specimens of this Fir throughout the country, there are few to surpass this in symmetry and condition. At Castle Menzies in Perthshire there is a tree 72 feet high, and that is the highest known to me. *Abies concolor*, though only some 35 feet high, is an excellent specimen of this beautiful Fir, the same remarks applying to it as to the preceding; but at Linton Park, Maidstone, is a tree of the species 64 feet high which is shown to visitors with a great deal of pride.

Abies Douglasi, 80 feet in height, and 12 feet in diameter at 3 feet from the ground, is superb in all respects, and though it is surpassed by the Dropmore Douglas Fir in mere height, which is estimated at 120 feet, I do not think it is equalled in other points. *Abies grandis* is a magnificent Fir when seen like it is at Endsleigh over 50 feet high and beautifully proportioned. Of *Abies Morinda* there are several specimens about 40 feet in height, while *A. nobilis* runs up to 65 feet, *A. Nordmanniana* to 70 feet, and *A. pectinata* to 100 feet. I do not know a taller and better developed *A. Nordmanniana*, and I have only heard of two specimens of *A. pectinata* of greater size in cultivation.

The Pines are not so remarkable as the Firs, for though there are several large specimens, they have either suffered in gales or the lower branches have died away. It is thought that the south-westerly slopes are too hot for them, and that, notwithstanding the heavy rainfall, the moisture drains away from their roots too quickly. Still *Pinus Strobus*, 75 feet high, and *Pinus Laricio*, 70 feet, are fine trees; while an old example of *Pinus Montezumæ*, though only 30 feet high, is notable and interesting. The last named is a Mexican Pine, which was introduced by Hartweg in 1839, but is generally regarded as not hardy in England, though it appears safe enough in Devonshire and Cornwall. It is very common and very variable in its native country, and to the latter circumstance is due the large number of different names that have been bestowed upon it. For instance, Dr. M. T. Masters gives no less than fifty-eight synonyms. It is rather unfortunate that two supposed distinct Pines, selected to do honour to a former Duke of Bedford and a Duke of Devonshire—i.e., *Pinus Russelliana* and *P. Devoniana*, which have both proved to be identical with the protean *Pinus Montezumæ*; at least, that is the determination of the authority above mentioned, though in Veitch's "Manual of the Coniferae" it is said the specimen of *P. Russelliana* at

Bicton is distinct from *P. Montezumæ*. This unfortunately I have not seen, though I find there is an impression amongst several that they really are distinct.

Amongst other Conifers that thrive uncommonly at Endsleigh, *Cupressus Lawsoniana* is conspicuous, one example reaching nearly 70 feet, in magnificent condition, and surpasses the great majority of trees of this Cypress in British gardens; but I have seen one at Dupplin Castle, Perthshire, that is a near rival, though it is under 60 feet in height. *Cupressus nutkaensis* and *Cryptomeria japonica* are each about 45 feet high; *Wellingtonia gigantea*, 80 feet; *Araucaria imbricata*, 45 feet; *Taxodium distichum*, 50 feet; *Cedrus Libani*, 70 feet; *Sequoia sempervirens*, 45 feet, and *Thuia Lobbi*, in several good examples 40 to 60 feet high, are the most remarkable of the larger trees. It must be mentioned, however, that *Retinosporas* succeed, numbers of handsome specimens being observed near the walks.

A picturesque feature is the glen which extends from the higher part of the ground to the neighbourhood of "The Cottage," with a stream running through it, dashing at intervals over rocky falls. Being sheltered on each side by the tree plantations and shrubberies abundant suitable sites have been provided for tender plants, and those which thrive in moist situations or near running water. Full advantage has been taken of these, and quite a sub-tropical character is imparted to portions of the glen by means of Palms, the taller grasses of the *Gynerium* type, and rare or tender shrubs. *Chamærops Fortunei* and *C. humilis* have both stood out for some years, and have passed through severe frost trials unscathed. They are in good condition, and appear to find the conditions exactly suited to their requirements. That interesting shrub *Benthamia fragifera*, however, suffers frequently by frost, and consequently does not make much progress, though I have seen it thrive in much more exposed and colder positions. Situation and moisture have a great bearing on the hardiness of plants of all kinds. I imagine that at Endsleigh there is a marked difference between the climatal conditions of the higher and lower ground.

It is only in the gardens of our southern and western counties that the Tree Heath, *Erica arborea*, is seen in its full beauty; indeed, it is rarely found in cultivation here, even under glass, though the reason for this neglect would be difficult to discover, as it is equal in attractions to many other species that are in favour. In the Southern States of Europe it is often a conspicuous object, attaining the height of 12 feet or more; and as it flowers profusely, huge bushes appear to be a mass of blossom. At Endsleigh this *Erica* is evidently thoroughly at home, vigorous specimens 7 to 8 feet high having a grand effect when their branches are thickly set with the long tubular white flowers, as they are usually in the late autumn months. A sheltered situation is accorded to the plants, but they seem to escape the spring-frosts injuries, which cause trouble to so many other shrubs. The wood of this Heath has been in great demand for the manufacture of pipes, and the French word "*Bruyère*" has been converted into "*Briar*" here, which conveys a very different and erroneous impression as to the source of the material so much in request.

Much more was there to be seen and noted at Endsleigh, but the shades of an autumn evening were fast obscuring the prospect, and when the kitchen garden was reached the light only sufficed to show that it was admirably kept and stocked, just indeed as might be expected at the hands of so capable a gardener as Mr. Frank Yole.—VIATOR.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—APRIL 26TH.

THE display in the Drill Hall on Tuesday, when the Auricula and Primula Show was held in connection with the regular meeting, was very rich and diversified. Every section was well represented.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with Rev. W. Wilks, and Messrs. G. Bunyard, J. Cheal, P. Veitch, A. H. Pearson, G. W. Cummins, A. F. Barron, W. H. Divers, G. Norman, J. Willard, J. Smith, G. Wythes, J. H. Veitch, W. Pope, W. J. Empson, A. Dean, and J. Wright.

Mr. H. T. Martin, gardener to Lord Leigh, Stoneleigh Abbey, sent extremely large heads of Seakale, some of them weighing 1 lb. each. They had presumably been grown from unusually large crowns covered in the open ground. A cultural commendation was unanimously awarded.

Mr. J. Read, The Gardens, Bretby Park, Burton-on-Trent, sent samples of a late and proliferous vegetable, *Read's Sprouting Kale*. It was called Read's Sprouting Broccoli, but as plants are grown at Chiswick and approved there the variety was determined to be a Kale. It is distinct from all others, and will probably prove a serviceable addition to late spring greens (award of merit).

Mr. Owen Thomas sent from the gardens of her Majesty an extremely handsome Melon, *Lord Edward Cavendish*. Fruit large round, with a thin rind, chastely netted; thick, tender, white flesh, faintly tinged with green, juicy, and pleasantly flavoured. The best Melon that has been exhibited at any of the Society's meetings in April. An award of merit was unanimously granted.

Mr. G. Wythes, Syon House Gardens, arranged an extensive and admirable display of vegetables. It comprised upwards of thirty dishes,

all in the pink of condition for a nobleman's table. Potatoes, French Beans, Cabbages, and Broccoli in variety, Mushrooms, Seakale, Asparagus, Tomatoes, Peas, Kales, Spinach, Tomatoes, and Lettuce were all excellently represented, and a silver-gilt medal was unanimously awarded.

Of equal merit in the estimation of the Committee was a very fine assortment of fruit and vegetables from the gardens of Mrs. Wingfield, Amphill House (gardener, Mr. W. J. Empson). A row of Royal Sovereign Strawberry in pots, laden with rich scarlet fruit, made a handsome background. The central object in the group was a bunch of Bananas, flanked by large Apples and Pears. The vegetables consisted of enormous Leeks and Onions, diminutive tender Radishes, bright Tomatoes, excellent Potatoes, Asparagus, Cucumbers, and Seakale. As above indicated, a silver-gilt medal was unanimously awarded.

PRIZES FOR FLAVOUR.—The first prize for a dish of Apples went to Col. Brymer, Dorchester, with Allen's Everlasting; and the second to C. P. Serocold, Esq., with Herefordshire Pearmain. No Pears were staged.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. J. Fraser, Owen Thomas, C. T. Drury, H. B. May, G. Nicholson, R. Dean, G. Stevens, W. Howe, J. F. McLeod, T. Peed, R. B. Lowe, J. Jennings, N. F. Barnes, J. Hudson, C. Jeffries, W. Bain, J. D. Pawle, C. E. Shea, J. W. Barr, T. W. Sanders, E. T. Cook, E. Beckett, H. J. Jones, D. B. Crane, G. Paul, H. S. Leonard, G. Gordon, and H. Turner.

The several splendidly flowered plants of *Azalea mollis* from Messrs. R. & G. Cuthbert, Southgate, made a charming display. Many named varieties of merit were observed. Mr. John Walker, Thame, sent half a dozen boxes of *Maréchal Niel* Roses, which diffused a pleasing fragrance. A small group of alpine plants came from Mr. T. S. Ware, Tottenham. There were Primulas, Saxifragas, Trilliums, and several others. Messrs. Paul & Son, Old Nurseries, Cheshunt, staged an interesting exhibit of hardy flowers in capital condition. The plants were in good health, and as a rule were flowering freely. Conspicuous among the many were *Aubrietia Froebeli*, *Gerbera Jamesoni*, *Alyssum saxatile* fl.-pl., *Geum minimum*, *Viola Skylark*, *Primula altaica*, *P. rosea*, *Doronicum plantagineum excelsum*, *Adonis vernalis*, several Saxifragas, and others.

A handsome group of *Gloxinias* was arranged by Messrs. J. Laing and Sons, Forest Hill. It was apparent that the strain is an excellent one, for not only were the colours well diversified, but the flowers were of good size and substance. The plants were very floriferous. Mr. W. J. Empson, gardener to Mrs. Wingfield, Amphill, Beds, showed a magnificently flowered plant of *Trillium grandiflorum album*, while J. H. Arkwright, Esq., sent from Leominster bunches of beautiful Primrose Evelyn Arkwright. Mr. J. Crook, gardener to W. H. Evans, Esq., Forde Abbey, Chard, exhibited flowers of *Rhododendron Veitchi lævigatum*. Messrs. J. Peed & Son, Norwood, exhibited an assortment of finely grown *Dracænas*. There were a considerable number of varieties in each case. The foliage was splendidly coloured and of great substance.

Messrs. J. Veitch & Sons, Ltd., Chelsea, staged in splendid condition *Deutzia hybrida Lemoinei*, *Rhododendron indica Kämpferi*, and *Chionanthus virginicus*. Sir John T. D. Llewellyn, Bart., Penellgare, Swansea, showed a most interesting collection of hardy Himalayan *Rhododendrons*. Almost the whole of them were named, and some of them were very handsome, the colour being rich and the flowers of great size. Messrs. R. Wallace & Co., Colchester, exhibited a small group of hardy flowers, comprising mainly *Erythroniums*, *Fritillarias*, *Tulipa Greigi*, and *Trillium erectum*. Mr. W. Fyfe, gardener to Lord Wantage, Lockinge Park, Wantage, sent a large exhibit of Fortune's Yellow Rose. The blooms were of superb quality, and represented the best of cultivation. Mr. H. B. May, Upper Edmonton, exhibited a group of gold and silver Ferns in variety. The group was of much interest.

The large exhibit of Roses from Mr. W. Rumsey, Joyning's Nurseries, Waltham Cross, was an admirable one. The varieties were numerous, the flowers of good form, and the colours rich. Amongst the most noticeable were *Maréchal Niel*, Mrs. Rumsey, Niphetos, Ernest Metz, Ulrich Brunner, Madame Hoste, and Alba Rosea. Mr. W. Mount, Canterbury, showed Roses in superb form. Catherine Mermet, The Bride, Ulrich Brunner, and several others were magnificent. The growth made by the Canterbury Roses is wonderful, as was proved by the flowers that were shown on long stems. Mr. W. Bain, gardener to Sir Trevor Lawrence, Bart., Dorking, showed a group of Anthuriums that were far above the average of merit.

Messrs. Barr & Sons, King Street, Covent Garden, were represented by a remarkable little group of Ophrys, and Primulas and Saxifragas, with single and double Tulips. Messrs. Paul & Son, Cheshunt, showed an exceedingly floriferous Polyantha Rose, named Psyche, which Mr. Paul, jun., has raised from a cross between Golden Fairy and Crimson Rambler. It should be an acquisition. A new H.P. named J. B. M. Camm also came from Cheshunt, as did one or two *Rhododendrons*. Messrs. Linden, Brussels, sent a number of Anthuriums in variety.

Rhododendron Nuttalli in grand form was shown by Mr. W. Howe, gardener to H. Tate, Esq., Streatham; while G. F. Wilson, Esq., sent Primrose of excellent quality. Messrs. Osman & Co., Commercial Street, sent dried Ferns on a groundwork to form lamp shades and other ornaments.

NARCISSUS COMMITTEE.—Present: J. T. Bennett-Poë, Esq. (in the chair); with Miss Willmott, Rev. S. E. Bourne, Messrs. W. Golding, F. W. Burbidge, Kingsmill, G. H. Engleheart, and C. Scrase Dickens, Hon. Secretary.

A large and comprehensive display of Daffodils was staged by Mr. Thos. S. Ware, Hale Farm Nurseries, comprising fine bunches of

Emperor, bicolor Victoria, bulbocodium, Sir Watkin, Horsefieldi, Cynosure, Wm. Golding, and I. sulphureus Beauty. Messrs. Barr & Sons, King Street, Covent Garden, staged an admirable collection of Narcissi. The whole assortment was remarkably fresh and bright. The chief forms were Matron, Vincent, Madame De Graaff, Mrs. Camm, Ladas, Cecilia, Weardale Perfection, Apricot, Mrs. H. Barton, Mrs. C. Bowley, Glory of Leyden, Gloria Mundi, Shakespeare, I. Beauty, and Queen of Spain.

Messrs. J. R. Pearson & Sons, Chilwell Nurseries, Notts, also enriched the display of Narcissi, contributing a number of very handsome bunches. The chief were Emperor, Sulphur Phoenix, Leedsi amabilis, maximus, Minnie Hume, Lulworth, Mrs. Langtry, Glory of Leyden, Jas. Walker, and Figaro. Messrs. Jas. Veitch & Sons, Chelsea, produced a very choice display of Narcissi, tastefully arranged with small Maiden-hair Ferns. The best were Leedsi Gem, La Grandesse, Hon. Mrs. Barton, Duchess of Westminster, poeticus poetarum, Sulphur Phoenix, C. J. Backhouse, and Mrs. J. B. M. Camm. The Rev. G. H. Engleheart, Appleshaw, Andover, staged a choice collection of hybrid and seedling Narcissi. The most striking were Will Scarlet, White Lady, Longfellow, Garnet, and others.

ORCHID COMMITTEE.—Present: W. Thompson Esq. (in the chair); with Messrs. J. O'Brien, de B. Crawshay, H. Ballantine, H. Little, A. H. Smee, F. J. Thorne, H. J. Chapman, W. H. White, W. H. Young, E. Ashworth, T. W. Bond, W. Cobb, H. Williams, J. Douglas, H. M. Pollett, E. Hill, S. Courtauld, and T. B. Haywood.

Messrs. H. Low & Co. Enfield, were represented by a bright collection of Orchids; Dendrobiums, Cattleyas, Odontoglossums, and Cypripediums made up the bulk of the display. A few Odontoglossums came from J. Bradshaw, Esq., Southgate; while the Right Hon. J. Chamberlain sent from Birmingham a small group containing Lælio-Cattleyas, Epi-Cattleya guatemalensis, Galeandra Devoniana, and others. Messrs. J. Veitch & Sons showed a charming group of Orchids. The plants were few in numbers, but the quality was excellent. Amongst others were noted Lælia Latona, Lælio-Cattleya Ascania, Cattleya Mendeli, Dendrobium Boxalli, D. cheltenhamense, Cattleya Philo, Epidendrum Wallisi, Masdevallia Veitchiana, and Brassia brachiata.

Smaller exhibits of Orchids came from Baron Schröder, W. Cobb, Esq., Mr. N. F. Barnes, Eaton; C. L. N. Ingram, Esq., W. Thompson, Esq., E. Ashworth, Esq., De Barri Crawshay, Esq., and others. Messrs. Linden, Brussels, exhibited a splendid collection of Odontoglossums, comprising many well known and several rare varieties. There were forms of Pescatorei, crispum, vexillarium, and several others. Messrs. B. S. Williams & Son, Upper Holloway, sent miscellaneous Orchids and foliage plants, Odontoglossums and Cattleyas forming the major portion of the group.

MEDALS.—Floral Committee: Silver-gilt Banksian to Mr. G. Mount; silver Flora to Messrs. H. B. May, J. Laing & Sons, and W. Bain; silver Banksian to Messrs. W. Rumsey, R. & G. Cuthbert, L. Linden, and Osman & Co.; bronze Banksian to Mr. W. Fyfe. Narcissus Committee: Silver Flora to Messrs. J. Veitch & Sons and Barr & Sons; silver Banksian to the Rev. G. H. Engleheart. Orchid Committee: Silver-gilt Flora to Mr. L. Linden; silver Banksian to Messrs. J. Veitch & Sons, H. Low & Co., and B. S. Williams & Son.

CERTIFICATES AND AWARDS OF MERIT.

Calla Rhodesia (J. Jennings).—The spathe of this is rich yellow and of exceptional size. The foliage is pale green with white spots (award of merit).

Cattleya Mendeli Beatrice Ashworth (H. Holbrook).—Save for suffusions of blush this is a pure white form with a yellow throat (award of merit).

Cattleya Schröderæ amabilis (J. Veitch & Sons).—A grand form. The prevailing colour is soft rose, the throat being orange buff (award of merit).

Cattleya Sedeni (T. W. Bond).—A hybrid resulting from a cross between C. Lawrenceana and C. Percivaliana. The sepals and petals are rich deep purple-rose, as are the fimbriations of the lip. The central patch is bright crimson (award of merit).

Cattleya Schröderæ, Harefield Hall var. (E. H. Hobbrough).—A superb form of the well known type (award of merit).

Cymbidium, no name (J. Sparks).—The sepals and petals of this Orchid are almost black, and the small lip dull crimson (award of merit).

Deutzia parviflora (J. Veitch & Sons).—A handsome Deutzia with heads of pure white flowers (award of merit).

Lælio-Cattleya Thorntonii (J. Veitch & Sons).—Resulting from a cross between Lælia Digbyana and Cattleya Gaskelliana, this is very handsome. The sepals and petals are soft rose suffused with purple. The lip partakes largely of the character of L. Digbyana. The central colour is yellow paling to white, and the fringe is pink. The petals are serrated (first-class certificate).

Lælio-Cattleya Wellsiana langleyensis (J. Veitch & Sons).—Another bigeneric hybrid. The parents were Lælia purpurata and Cattleya Trianae. The broad petals are rose flushed with purple, and the petals pale blush. The handsome lip is velvety purplish maroon, deepening towards the throat, which is yellow with rose at the base (first-class certificate).

Narcissus Diadem (G. H. Engleheart).—Of this variety the crown is shallow and very broad, with a rose edge over the yellow ground. The perianth segments are cream (award of merit).

Narcissus Will Scarlett (G. H. Engleheart).—A superb variety. The

magnificent cup, rich orange in colour, is fully an inch across. The perianth segments are white (first-class certificate).

Narcissus White Lady (G. H. Engleheart).—A good form of incomparabilis. The crown is pale yellow, and the perianth segments white (award of merit).

Narcissus Ivanhoe (J. Veitch & Sons).—An incomparabilis of undoubted merit. The perianth segments are pure white, and the crown very rich orange (award of merit).

Odontoglossum Hunewellianum (H. Greenwood).—The yellow ground colour of this flower is almost hidden by the chocolate markings (award of merit).

Odontoglossum Pescatorei Duchess of Westminster (N. F. Barnes).—A lovely Orchid. The maroon spots are large and abundant on the pure white ground (award of merit).

Primrose Evelyn Arkwright (J. H. Arkwright).—An exceptionally fine form of the common Primrose (award of merit).

Pteris Summarsi (H. B. May).—This is a handsome crested Pteris of dwarf compact habit (award of merit).

Rose Psyche (Paul & Son).—A Polyantha Rose of much promise. The flowers are large and of a rich pink colour (award of merit).

Rose, The Dawson (Paul & Son).—A semi-double Polyantha Rose of good habit. The colour is bright rose (award of merit).

INDIAN AZALEAS IN USEFUL COMPANY.

THE contribution on Indian Azaleas on page 232, to which I volunteered a supplement on page 278, also referred to the claim these lovely flowers have on a house to themselves, which I consider perfectly justified. It might, however, occur to amateurs to join other appropriate plants to such a collection as will do well under similar treatment. Such I now suggest, but before naming them I should like to acknowledge an omission from my former list of Azaleas of an old favourite, Madame V. de Cruyssen, of very lively light crimson colour, also two more of lustrous metallic tint—Baron de St. Genois, very double, flowering in June; and a newer variety, Prince Rudolph, both acquisitions.

To produce the desired abundance of flowers on Azaleas annually it may be a service to some of the younger growers trying for a display to know that after flowering, and the removal of seed pods, they should be kept in a genial atmosphere for a month in order to promote growth, and be freely syringed. After this they may be turned out of doors in June, July (in the south), but not exposed to the full sunshine before the middle of August, and be re-housed a week or two before frosty nights occur in September. A fair number of the plants named in the following lines will succeed under similar outdoor treatment.

HIMALAYAN RHODODENDRONS.—These require syringing even more freely than Azaleas, both indoors and out, in dry summer weather. They are the most appropriate companions of the Indian Azaleas. Among them is a conspicuous beauty, Veitchianum, white, with undulated edges; Edgworthi, fragrantissimum, white, without undulations; Countess of Haddington, Falconeri, Countess of Derby, jasminiflorum, carminatum, formosum, ciliatum, the two latter smaller than the others. If grown in standard form 3 to 4 feet high, and kept well regulated in short growths, the weight of their abundant flowers will on expansion depress on some varieties the lower branches so as to meet at the stem and form a perfect globe. I have seen Edgworthi thus treated with 250 flowers open simultaneously, an object of unsurpassed beauty, its scent being not the least of its desirable attributes.

Amongst other hardwooded plants for association are the following:—

ACACIAS.—A large and elegant family of greenhouse plants, varying in colour from lemon to yellow, such as Drummondii, dealbata, grandis, armata, and Riceana, all of them attractive, while others possess distinct features in foliage or habit.

BORONIA.—One of the choicest flowering greenhouse plants is B. heterophylla, with its profusion of rosy magenta pendant bells (see woodcut, fig. 72). B. Drummondii has smaller flowers, and is more fragile; while B. pinnata and B. serrulata are clear rose, and differ in habit from the former. B. megastigma is of quite another character, the small flowers being dark brown and delightfully fragrant.

ERICAS AND EPACRIS.—The former from the Cape Colony, such as the ventricosa varieties, Cavendishiana, and many others. The Australian Epacris are similarly decorative, E. miniata splendens being extremely bright, and hyacinthiflora candidissima the finest white.

There are numerous other hardwooded plants, which, though less popular than they were a generation ago, are still well worthy of cultivation. Some of these I may, perhaps, refer to on a future occasion.—H. H. R.

ALEXANDRA PALACE.—It is many years since a flower show was held within the precincts of the Alexandra Palace, but now on its re-opening we find flowers are to form one of the attractions. We have before us the schedule of an exhibition that is announced for May 18th, 19th, and 20th, just one week prior to the Temple Show of the R.H.S. Only fourteen classes are particularised, of which a dozen are open to all, nurserymen being excluded from the remaining two. The sum of £16 is offered in three prizes for a group of miscellaneous plants on a central ground of 250 feet, and £9 10s. for another group of about half the size, not open to nurserymen. Other classes are for Orchids, specimen plants, Calceolarias, tuberous-rooted Begonias, and cut flowers. Applications for particulars and schedules should be made to Mr. R. Dean, Ranelagh Road, Ealing, who is the Show Secretary and Superintendent.

PLANTING VINES.

THIS is a good time for planting young canes, as they now start naturally into growth, almost always making some leaves before pushing roots. In well-drained soils, such as calcareous loams over gravel or other natural drainage, expensive borders are often worse than the ordinary staple, and though I prefer planting the Vines inside, there is no question of outside borders giving the least trouble in respect of watering. Besides, I am not convinced of the inside border system being the best for Vines required to start in March, and perfect their crops in August and September; indeed, the outside border, under the conditions quoted, has decidedly the advantage in respect of the best possible supplies of water, not any being equal in nutritive value to that from the clouds. But the great objection to outside borders, in many places, is the bare appearance and consequent eyesore in the estimation of the proprietor or visitors. Even many growers strive to utilise the border for certain things that require a sheltered situation or a rich soil to arrive at an early or extra degree of perfection. Laudable as this may be in intention, it often means a sorry appearance in Grapes.

For greenhouses the outside border means a great deal to the proprietors—all the space inside available for plants, and no danger of ruining the Vines by too much water in their resting season. But the outside border must be kept wholly and solely for the Vines, and I may mention that a certain proprietor had to cover his Vine border with flints from the chalk formation in order to keep the gardener from planting it with prize Asters. In the whole course of my long experience I never saw such a transformation in growing Grapes as was effected by the flints. The Vines, lank in growth, loose in bunch, red and shanked in berry, produced in two years after the stone, or rather pebble mulching, stout wood, leathery leaves, compact clusters, purple-black berries, and not any shanked. It was merely a change from prizetaking with Asters to "first" for Grapes. The flints had a sort of rockwork-like appearance in summer, for in winter the border was mulched with short stable manure, and in March it was cleared off and the stones raised and again placed on the surface. The rain soon washed them clean, and they got quite hot on sunny days, and on raising them the Vine roots were revealed quite white and active. Light top-dressings could be given, watering or liquid manure applied without difficulty, and the appearance was pleasing rather than otherwise.

For general purposes the borders may be partly within and partly outside, planting the Vines inside the house; but for early forcing and for Muscats the borders are unquestionably best wholly inside. If the

substratum be gravel or other porous material, a good dressing of fresh horse droppings, a couple of pounds of quarter-inch bones (with the dust in), half a pound of a mixture of air-slaked chalk lime and soot in equal parts by measure, and half a pound of double sulphate of potash and magnesia per square yard may be put on and the ground trenched, or rather stirred, as in turning a compost heap, mixing as evenly as possible. This gives the best results I have seen in Grapes, the top soil being naturally a gravelly loam, with a substratum of calcareous gravel with iron.

If the soil by nature be of an unfavourable character, it may be necessary to make an excavation, but in such case it is better to keep the

border well up. In the case of a wet subsoil the bottom may be concreted, or bricks laid on flat and run with cement, providing drains with proper fall and outlet to carry off superfluous water, the bottom inclining to them. Rubble a foot thick should be placed on the concrete, 9 inches of clear rubble and 3 inches thickness of old mortar rubbish; 24 to 30 inches depth of border is ample. Turf 2½ inches thick, taken off old or new red sandstone or limestone, a good friable loam, broken up roughly and mixed with a sixth part of old mortar rubbish, a twelfth of wood ashes or charred refuse, and a forty-eighth of half-inch bones (with the fine left in) forms a suitable compost. It should be put together rather compactly, and there is no need to make a wide border; one 4 to 6 feet wide will be sufficient to commence with.

The Vines, cut back in winter and kept in a cool house, or even outdoors with the pots protected, now have the buds moving. Turn them out of the pots, remove every particle of old soil, even washing if need be, carefully preserving the fibres. Spread the roots out straight and flat, the soil of the border having been brought to the required height or level, covering to a depth of 3 or 4 inches, working the soil well amongst them with the hand. Give a good supply of water with the

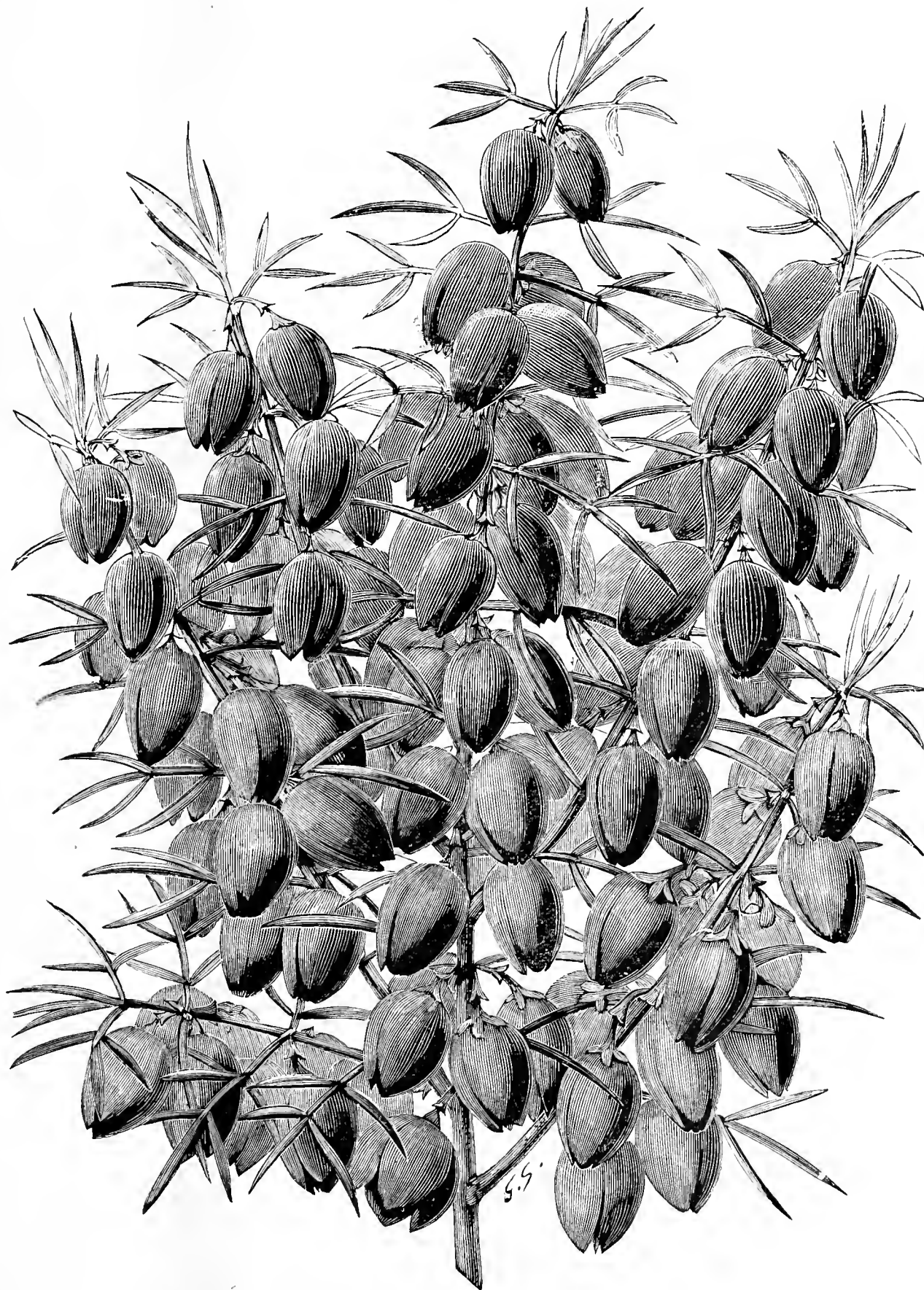


FIG. 72.—BORONIA HETEROPHYLLA.

"chill" taken off, and mulch with about an inch thickness of sweetened horse droppings. If the canes have not been shortened do not cut them now, but remove the buds from the upper portion down to where fresh growths are desired to issue, and cut away the disbudded part when the Vines have made some leaves, as there is then no danger of bleeding, nor will any take place from rubbing off the buds after they start into growth. If, however, the buds are extracted with a knife, and the wood laid bare, bleeding ensues, greatly weakening the Vines.

When the canes are planted in an outside border the exposed part must be carefully wrapped in haybands or hair felting, as frosts are not over, and the sap getting frozen may injure if not kill the Vines. Besides, the exposure to sun does them no good, but often much harm; indeed, the part outside the house should always be properly protected

from the cold of winter and the heat of summer. The aperture in the wall or other material must be considerably larger than the cane, even the rod having room for allowing some stopping material all round, so as to allow of unrestricted swelling.

In a greenhouse the Vines will come forward with the advancing temperature, they not being given any extra inducement to growth beyond sprinkling occasionally. Where the Vines are the chief or sole consideration the canes may be sprinkled twice a day, but avoid a close and forcing atmosphere. A temperature of 55° at night, 65° by day artificially, and 70° to 75° from sun heat, will bring the Vines on fast enough. If the weather be bright and the panes of glass large, shade from 10 A.M. to 2 P.M., when the house should be closed, damping the floor, border, &c. If the temperature rise to 85° or more it will be an advantage. When the Vines have started into growth give every encouragement, increasing the temperature to 60° to 65° at night, 70° to 75° by day, and 80° to 85° from sun heat. Admit a little air at 70°, as there is nothing like well-developed and thick leathery leaves for assimilating matter, and the stouter foundation a Vine has laid the better will be its health in after years, other conditions being favourable.—PRACTITIONER.

BALDRY'S SCARLET DEFIANCE RHUBARB.

As it is still true that the proof of the pudding is in the eating, perhaps the Editor will kindly give his opinion (after trial) of the sample of Rhubarb sent herewith. Several years ago the Committee of the R.H.S. invited specimens of the different varieties to be shown before them in a cooked state. We forget how many varieties were exhibited, but well remember the Committee were unanimous in awarding first honours to Baldry's Scarlet Defiance. We have grown many sorts, but find none anything at all equal to the above named variety. Is it grown under some other name, as it seems impossible that such an excellent Rhubarb can be so little known? Among all the nurserymen's catalogues received it is not named in one of them.—N. N.

[We suspect this superior variety of Rhubarb is somewhat scarce. It is, without doubt, the best in colour and quality we have proved this year. In some soils it does not seem to flourish, but judging by the stalks sent, the variety appears to be as happy with our correspondent as he is happy in its possession. In 1891 we published a description of the varieties grown at Chiswick. Baldry's Defiance is not included among them. Four varieties were cooked for comparison—Early Red, Paragon, Hawke's Champagne, and a small scarlet Rhubarb from a Lincolnshire rector. Of the Chiswick varieties, Hawkes' was the best; but for colour and sweetness far outdistanced by the Rector's. The samples from "N. N." resemble this, but the stalks are larger. We do not think Baldry's Defiance is offered under another name in catalogues generally. The Lincolnshire Rhubarb above mentioned declined to flourish at Chiswick. If this double "N." could send a few stalks to a single "N."—Mr. N. Pownall—perhaps he might favour with another disquisition on Rhubarbs. He studies them as closely, tests them as carefully, and writes on them as lovingly and agreeably as any gardener we know.]

HAVERING PARK.

THIS charming residence is owned by Mrs. C. McIntosh. The lodge gates of the principal entrance open into the delightful village of Havering, on the green of which are to be seen in good preservation the old-fashioned stocks, some of the men still employed on the estate well remembering them being in use. Close by a remarkable old Elm, which I have often seen quoted by cyclists and others, arrests attention, and though every care is taken to preserve it, it is fast going to decay. The distance of Havering Park from London is only twelve miles, whilst it is five from Romford. The extensive park is naturally finely undulated and well wooded, and is the home of the splendid herd of Jerseys for which Mrs. McIntosh is famous, her name appearing very prominently at most of the leading shows. The absence of water prevents the completion of the picture, but one or other of the valleys would lend itself admirably for an artificial stream or lake.

The mansion is an extensive structure, which was largely added to by the late Mr. McIntosh twenty-seven years ago. On the terrace from the south side a fine view presents itself, as on a clear day the boats may be seen passing to and fro on the Thames. On the north side is a commanding view of Epping Forest and Shooters Hill. The pleasure grounds are noted for a fine collection of American and other choice flowering shrubs, effectively grouped and in splendid health. There are large beds of Rhododendrons, Kalmias, Andromedas, and Azaleas, which a little later on will have a charming effect. Conifers have been largely planted, and many of them are doing well, but in some instances a judicious thinning would prevent many fine specimens from becoming crippled and spoiled. Wellingtonias by the hundred were observed, and several are grand specimens. Leading from the pleasure grounds in all directions are winding woodland walks which have been cleverly treated, and the margins planted with suitable bulbs and plants. Here and there on the outskirts are bold masses of Gorse, Broom, Berberis aquifolia, and others, while fine specimens of the Silver Birch are noticeable for their splendid clear stems.

The kitchen garden is not extensive, but it is in excellent condition. Wall and other fruit trees are well grown and give promise of good returns. Cordon Pears were particularly conspicuous. The houses are extensive, and are well cared for. Adjoining the mansion is a well

built conservatory, which contained some splendid Palms, Kentias being very fine. Clivias and all kinds of forced plants were in highly creditable form.

Vines are largely and well grown. The earliest house is chiefly planted with Hamburgs, which are in the best of health, carrying a heavy crop of shapely bunches. The Muscat house has been this season completely renovated, the old border taken out and the drainage thoroughly attended to. Half the house is planted with young canes, the other half being left, the whole of which are breaking strong and evenly. Two other houses are devoted to Grapes, one being planted with Alicantes, and the other with Hamburgs. The fruit in the early Peach house is swelling well, and the trees are heavily laden. A long range is devoted to late Peach and Nectarine culture, all the trees being very promising. About 700 Strawberries are forced in pots. The principal varieties grown are Royal Sovereign and La Grosse Sucrée, which, in various stages, are in excellent condition.

Two houses are devoted to Rose culture, and there is a wealth of fine flowers. The stove, greenhouse, Orchid, Cucumber and Melon houses are well managed. Pits and frames are stocked with Chrysanthemums, of which the large collection was in fine condition. The able gardener, Mr. King, scored well at the Aquarium last season, also carried all before him at Romford, and judging from the plants in their present stage he means business next season. All the departments of this well-kept garden reflect the greatest credit on the gardener. My visit was brought to a close after inspecting the model farm, the clean and comfortable home of the Jerseys, and the care with which they are tended is in keeping with the rest of this fine estate.—E. B.

EXPERIMENTS WITH TOMATOES.

IN your notice of my paper on the above subject published in the Journal of the R.H.S., you direct attention to a statement in reference to the value of potassic manures for Tomatoes. My intention was to state that potash was of little or no use for Tomatoes unless applied along with nitrogen and phosphates. Originally the sentence read, "Potassic manure is of little or no use for Tomatoes applied alone," but as nitrate of potash is considered a nitrogenous manure, and it was one of those that did not produce a good result, the word "alone" was erased in order to prevent any misunderstanding about the character of the manures.

In my report of the 1896 experiments it is definitely stated that when muriate of potash was applied by itself it proved to be a failure. The succeeding experiments were carried out with a view to proving whether potash manures applied separately and alone were beneficial to the growth of Tomatoes, and I may say that the results so far have conclusively proved to us that potassic manures without the addition of nitrogen and phosphates are simply valueless.—W. NEILD, *Cheshire Agricultural and Horticultural School*.

[Quite so; and the principle applies to other crops beside Tomatoes. Apart from the probability of the "heavy adhesive soil from a pasture field" containing potash, a few remarks of Mr. Cousins in his primer on the "Chemistry of the Garden" are apposite: "The 'Golden Tripod' is the name given to the presence of the three plant foods—potash, phosphate, and nitrate. If any one of these three substances be wanting no excess of the other two will make good the deficiency. Remove a leg from the tripod and over it falls. Planted firmly on its three legs, a slender tripod is capable of supporting a great weight." Nitrate of potash contains potash, and so does liquid manure from stables, and because of that, in combination of other essentials, the Tomatoes were benefited. Mr. Neild has done good service in making the experiments and publishing the results.]

SPRING SHOWS.

NEWCASTLE.—APRIL 20TH AND 21ST.

THE Durham, Northumberland, and Newcastle Incorporated Botanical and Horticultural Society has had a somewhat chequered history. Fixtures in the past have been almost invariably accompanied by wet weather and consequent failure when the shows have been held under canvas. Indeed, the disasters have been so numerous that, but for the energy of the Committee and the readiness with which outside aid has been accorded, this Society—the oldest of its kind in England—must have collapsed long since. However, for the spring display at least, there seems to be a brighter prospect. It has hitherto been held in the Town Hall and Corn Exchange, but the former is now in the hands of the decorators, so Olympia has been taken, and the show was opened on Wednesday. The change of site is, says the "Newcastle Daily Leader," in every way an advantage, for Olympia lends itself better to an exhibition of this kind, and then there is the advantage of having the whole of the plants and flowers staged in one building.

The arrangement in the present case was admirable in every way. The "groups" fronted the platform at the top. Running down the centre was a table with magnificent epergnes, hand and bridal bouquets, baskets of flowers, and sprays; flanking these on each side were others with cut flowers and plants; and round the sides were the miscellaneous decorative exhibits. The bottom of the hall was occupied by a row of superb Azaleas loaded with red and white blossom, and behind these, under the balcony, was a splendid collection of giant Palms, sent by Mrs. Jennings of Newcastle. Experts agreed that in every respect the show was the

best that has been seen in Newcastle for many years. Amongst the great centres of attraction were, of course, the bouquets, baskets of flowers, and epergnes. Altogether better quality of flowers were used this year, there was more diffusion of colour, and much more taste seemed to have been displayed in the general arrangement. Many choice Orchids were used in the floral decorations. The sprays were also very fine. The general excellence of the bouquets was so high that the Judges had considerable difficulty in giving their awards. The same may be said of the baskets.

There were about 500 Hyacinths staged, and many recently introduced varieties were to be found amongst them. Several stands of Roses were shown in good colour and bloom, and the show of Auriculas was also one that claims attention. The increased encouragement given by the Society for the cultivation of these flowers is having its effect. The collection was exceptionally fine considering the season. The groups of flowers and plants were excellent both in arrangement and quality, the extra inducements offered to amateurs having had a beneficial effect. Too much praise cannot be bestowed upon the exertions put forward by exhibitors in this department. In Azaleas, Cinerarias, Primulas, and bulbs of various kinds, the quality was far ahead of anything previously seen here.

There were many stands "not for competition," and many novelties. Most striking was a cluster of blue Primroses sent by Mr. James Douglas, Bookham. Messrs. Wm. Clibran & Son, Altrincham and Manchester, showed a general assortment of stove and exotic plants containing over forty novelties rarely met with. There were yellow Callas, Boronias, and many others. The firm also makes a speciality of Carnations, and among the many choice blooms on exhibition was a new one called Yellow Wonder, an enormous bloom of rich colour and delicate perfume. Messrs. Pearson, Notts, staged Daffodils in grand form. They had all the newest varieties on exhibition, including Madame de Graaf. It is a superb bloom, but the price is at present rather prohibitive. All other sorts were exhibited, from the large, rich yellow Glory of Leyden to the miniature mountain species Angel's Tears, and a special feature was made of the red cup varieties. Messrs. Fell & Co., Hexham, also had a good show of plants of various kinds. Other exhibits included Messrs. Emley & Sons, Newcastle, horticultural implements of various kinds; Mr. H. H. Hilliar, Darlington, plants; Messrs. W. Edwards & Son, Sherwood, Notts, table decorations; Messrs. J. Thomson & Son, Forest Hall, plants; Messrs. T. A. Hutchinson & Co., Forest Hall, plants; Mr. J. G. McKenzie, Heddon-on-the-Wall, Orchids; Mr. W. Lawrenson, Yarm, plants; and Mr. A. E. Campbell, Gourock, N.B., plants. The show was well patronised during the day. The Blue Hungarian Band, which had been specially engaged, gave concerts of high-class music during the afternoon and evening, and the programmes were greatly enjoyed. We give the names of the prizewinners in a few of the open classes.

In the open section there were several splendid exhibits from various growers of repute. For a group of miscellaneous plants arranged for effect in a space of 60 square feet, Mr. G. MacDougall was first, Mr. J. McIntyre second, and Mr. H. Hilliar third. The successful exhibitors of three specimen flowering plants were Messrs. J. McIntyre, T. Wheeler, and H. Hilliar, in the order in which their names are given. For three Orchids Mr. T. Wheeler went to the front, followed by Mr. W. Lawrence and Mr. J. McIntyre. The last named was successful with four Dielytras; Mr. W. Pitt was second, while for four Deutzias the best were staged by Messrs. W. Pitt, T. Wheeler, and H. Hilliar. Mr. J. McIntyre sent the best Spiræas, and Mr. W. Pitt the best Cinerarias. Primulas and Cyclamens were well staged by Messrs. G. MacDougall and T. Wheeler, and Lily of the Valley by Mr. W. R. Armstrong. As has been said, Auriculas were well shown. The principal prizewinners including Messrs. T. E. Hay, R. Willis, S. Bewick, G. Lee, J. Ellison, J. Cawthorne, and J. Gardener.

Very bright and interesting were the many bulbous plants in pots. There were classes for Hyacinths, Tulips, and Daffodils, and each contained specimens of excellent quality. The use of moss for covering the surface of the soil was prohibited. In the Hyacinth classes the successful staggers were Messrs. G. MacDougall, D. Wylam, T. Wheeler, A. E. Campbell, H. Dewar & Co., and W. Lawrenson. For Tulips, the prizes went to Messrs. G. MacDougall, D. Wylam, T. Wheeler, and E. Callaghan; while, practically, the same names were on the cards in the Daffodil classes. Mr. G. MacDougall was the premier exhibitor of both Gloire de Dijon and Marechal Niel Roses, and Mr. M. Wheatley of Show and Fancy Pansies.

Table decorations, bouquets, sprays, and buttonholes were beautifully arranged. For a vase or epergne for the drawing-room Mr. T. Battensby was first, Miss Edmondson second, and Mr. A. Lawless third. For a basket of cut flowers Messrs. Perkins & Son were first, Mr. F. Edmondson second, and Mr. W. Lawrenson third. Messrs. Perkins & Sons were also successful in the classes for bridal bouquets, hand bouquets, sprays for ladies, and buttonhole bouquets.

AURICULA AND PRIMULA.—APRIL 26TH.

THE Auricula and Primula Society (Southern Section) held its annual exhibition at the Drill Hall, Westminster, on Tuesday, April 26th. The exhibition has undoubtedly grown in magnitude and excellence. The majority of the classes were well filled, and in many instances the competition was very keen. The Alpine classes appear to be very popular, while the other sections were satisfactory. Great interest was manifest in the Primula species, which were well represented.

In the class for twelve Auriculas, dissimilar, Mr. J. Douglas, Great Bookham, Surrey, secured premier honours with a very even exhibit. The varieties were Olympus, grand; Mrs. Henwood, George Lightbody,

Marmion, Dr. Hardy, Acme, George Rudd, Black Bess, Mrs. Potts, Mrs. Dodwell, Negro, and Greenfinch. Mr. C. Phillips, Bracknell, secured the second place with good plants of Mrs. Dranfield, Marmion, Heatherbell, Miss Barnett, and Mrs. Phillips. Mr. Wm. Smith, Bishops Stortford, third; and Mr. J. T. Bennett-Poë, Ashley Place, S.W. fourth.

Mr. Chas. Phillips was clearly ahead in the class for six varieties, dissimilar, with good plants of Geo. Rudd, Mrs. Phillips, Mrs. Barnett, Mrs. Harwood, Rich. Headley, and John Simonite. Mr. W. Smith proved a good second with excellent blooms of Black Bess, George Rudd, and Conservative. Mr. J. T. Bennett-Poë third with very good plants of Black Bess, Acme, and Rachel.

Mr. J. Sargent, Cobham, proved the victor in a class for four varieties, in a very keen competition, staging good plants of Mrs. Potts, Abbé Listz (the premier Auricula in the show), Mrs. Dodwell, and Lancashire Hero. Mr. A. S. Hampton, Reading, second with good examples of Heroine, George Rudd, and the Rev. F. D. Horner. Mr. A. R. Brown, Birmingham, third with a good Ajax. Mr. A. Fisk, Broxbourne, fourth; Mr. Palmer, Shortlands, fifth; and Rev. L. R. Flood, Merrow, sixth.

Mr. P. Hennell, Winchmore Hill, was first for two, dissimilar, with well-developed plants of Rev. F. D. Horner and Acme. Mr. J. Sargent must have been a very near second with a capital plant of John Simonite, the other variety being the popular Abbé Listz. Mr. A. R. Brown was placed third with a good plant of Heatherbell, and a weak specimen of Black Bess. Mr. A. S. Hampton fourth, Mr. W. W. Palmer fifth, and the Rev. L. R. Flood sixth.

A good competition was brought out in the class for a single specimen, green edged, Mr. Phillips being placed first with Mrs. Henwood, Mr. Sargent second with a good specimen of Rev. F. D. Horner, and Mr. J. Douglas third with the same variety. Mr. Sargent was awarded first place for a grey-edged variety, with a good plant of Lancashire Hero. Mr. W. Smith second with Geo. Rudd, and third with Rachel.

The single specimen plants in the white-edged varieties were excellent, Mr. Sargent leading with the charming Heatherbell. Mr. J. Gilbert second with a very good Acme, Mr. Jas. Douglas third with the same variety. The single self class proved a very popular one, and brought out a numerous entry. Mr. Fisk was first with Heroine, Mr. Jas. Douglas second with Mrs. Potts, and Mr. W. Smith third with the same variety.

There were three competitors for fifty Auriculas, and the premier honour was awarded to Mr. J. Douglas for a really good exhibit. The most notable varieties were Ruby, Ajax, Monarch, Lord of Lorne, Heroine, Ariel, Venus, and Mrs. Dodwell. The Guildford Hardy Plant Nursery, Guildford, was placed second with a very even collection. Phyllis, Mrs. A. Potts, Chas. J. Perry, Brunette, Ariel, and Potts' Green were very good. Mr. Chas. Phillips third.

The Alpine classes were well filled throughout. In the class for twelve plants Mr. C. Phillips was placed first with a grand exhibit. The plants were excellent and the varieties distinct and varied. The best forms were Mrs. Martin Smith, Gladys, Lady C. Walsh, Evelyn Phillips, Vandyke (grand), and Perfection. Mr. Jas. Douglas was second, Britannia, Urania, Firefly, Dean Hole, and Lord Dudley being especially good.

A good competition was displayed in the class for six varieties, Mr. F. Whitbourne, Great Gearies, Ilford (gardener, Mr. J. W. Euston) first with Urania, good; Calypso, The Bride, and Psyche, all excellent varieties. Mr. C. Phillips second with larger plants, though they lacked the finish of the first six. Mr. J. Douglas third. For four Alpines Mr. J. W. Euston proved the winner. Mr. J. Walker was second, and Mr. A. R. Brown was third.

Mr. C. Phillips was placed first for a single plant, gold centre, with Clara, Mr. J. T. Bennett-Poë second with Dean Hole, Mr. Gilbert third with the same variety. Mr. C. Phillips was again successful in the class for a single specimen with a white or cream centre with Perfection; Mr. Keen second with Amazon, Mr. Douglas third with Edith. The Guildford Hardy Plant Nursery was well ahead in the class for twelve Fancy varieties. The best were Full Moon, Moonlight, Old Gold, Buttercup, and Belle. Mr. J. Douglas, Bookham, second with good specimens of Golden Plover, Golden Oriole, good; and Actè.

Mr. J. Douglas outdistanced all competitors for twelve Polyanthus, exhibiting fine fresh plants, comprising a very wide range of colours; Mr. G. Dixon, Chelford, second with an excellent box; and Mr. J. W. Euston third. Mr. J. Douglas was the only competitor for single Primroses, and was deservedly awarded the first prize; the plants were large and the flowers well developed. The double Primroses were quite a feature. Messrs. Paul & Son, Cheshunt, were placed first with fine pans of well developed plants. The Guildford Hardy Plant Nursery was second.

A very interesting collection was staged in the competition for twelve distinct species. Mr. Douglas first with good specimens of P. intermedia, P. pubescens, and P. floribunda. In the class for six species, Mr. J. W. Euston was placed first for good plants of P. floribunda, P. obconica, P. verticillata, and P. intermedia. The Guildford Hardy Plant Nursery was second with a very pretty basket. Messrs. Paul and Son third. Mr. J. T. Bennett-Poë was well ahead for a basket of Primroses arranged for effect. Mr. J. Douglas was second with an excellent arrangement, and Messrs. Paul & Son third.

Mr. C. Phillips was awarded first prize for a seedling self, Mrs. Dranfield. Mr. Barefoot, Croydon, was also awarded first honours for a seedling, with gold centre, named Mrs. Barefoot. Mr. Phillips second with Miranda. The Guildford Hardy Plant Nursery was first for a group of Primulas or Auriculas artistically arranged. Mr. Purnell-Purnell, Streatham Hill, was awarded second with a capital basket, and Mr. Douglas third.

BLACKTHORN WINTER.

How rarely now do we escape this above-named spring visitation! Yet is it for us as gardeners a time of the greatest interest and concern. Plums, Pears, and Cherries in full bloom, Gooseberries and Currants fully open and leafy, yet tender; and upon the safe passing through by these fruits at this critical stage hinge all our hopes of getting a good crop of their products. Just lately, how bitterly cold has the wind been! how intensely cold, and keen the frosts at night! If the bloom has managed to pull safe through such a time, then has it been hardly indeed. Naturally, it has been a period of intense anxiety to fruit growers. Men who embark in hardy fruit culture need be made of iron to be able to pass through such periods of anxious care as these Blackthorn winters invariably are. The chief hope that much of the bloom may have escaped harm lies first in its exceeding abundance, so much of it being easily spared, and also in exceeding dryness of the soil and air. The soil is indeed exceptionally dry, and because so arid there has been little humidity in the atmosphere at night. But in relation to overcoming the climatal conditions our springs now so commonly impose on horticulture, we have more and more to realise the very important part in production of fruits and tender vegetables that glass houses must play. That this fact is being largely recognised is evidenced in various directions by the truly immense breadths of glass houses being erected. Some day perhaps, should no legal decision interpose, we may see fruit culture under glass even of Plums, Pears, Cherries, and bushes enormously extended. For that reason, if for no other, it is difficult to regard the appeal to be made to the House of Lords *re* market glass houses assessment with other than profound concern. The decision then given may kill or give new life to the present expansion of food culture under glass. If, after seeing such a magnificent bloom promise on our trees of a great fruit crop, frosts materially destroy it, what a grave misfortune it would be indeed.—A. D.

Blackthorn winter, as country folk call the present season, when the above plant (*Prunus spinosa*) is blooming in the hedgerows, is conspicuous for cold easterly winds, frosty nights, and bright sunshine in the daytime. All this means careful attention in ventilating vineries and other houses in which there is tender foliage. Leave the ventilators of an early vinery open when the sun goes in and black clouds stop the supply of warmth, the keenness of the wind is then felt, and Vines suffer. Neglect, on the other hand, to re-open the ventilators directly the sun appears and the tender leaves are scorched. Ventilation is one of the most important points in Grape culture at this time of the year, and more particularly so if the roof of the house is low in the pitch, as in such cases the leaves scorch much more readily.—H.

THE YOUNG GARDENERS' DOMAIN.

GOLD PENMEN.

WITH the view of affording encouragement to young gardeners who strive to acquit themselves creditably in the literature of gardening, marks are accorded to the contributions on their merits in M.S. form—not as they appear when corrected. Some require much more preparation than others, and those writers are wise who preserve a copy of the articles which they send for publication, and take note of the treatment to which they have been subjected. The writers who have obtained the greatest number of marks during the past six months are “Nil Desperandum” and “Semper,” who thus entitle themselves to the “Fountains.” We should like to publish the letters they have sent in acknowledgement of the articles “more powerful than the sword,” but pressure on space forbids. They will not be the less satisfied by knowing they did not win easily, and one more article from each of two contributors would have placed them at the head of the lists. We extend, not to the winners only, but those losers who persevere, our best wishes for their future prosperity. Educated gardeners who are equally practical are the men of the future, and all the more accomplished gardeners of the present, who occupy the highest positions, are men who have striven the most perseveringly in the laudable work of self-improvement. They may have had to work and wait, but they have been equal to the requirements when opportunities have come.

FREESIA REFRACTA ALBA.

I THINK it would be almost impossible to find a winter-flowering bulbous plant with more excellent qualities than *Freesia refracta alba*. We have other bulbs, no doubt superior in some respects, but fail in the combined qualities which this plant possesses. In the adornment of the conservatory or greenhouse the white sweet-scented flowers are a grand acquisition, while in a cut state, for vase or buttonhole work, they are invaluable. They retain their freshness a considerable length of time—an important consideration where flowers for this purpose are in great request.

A good time to pot the bulbs is about the middle of August, using as a compost a fibrous loam, two parts to one of well-decayed leaf mould, and a fair sprinkling of coarse sand and wood ashes, which tends to keep the soil sweet. The largest bulbs should be selected. We find 5-inch pots large enough for five bulbs. They are potted moderately firm, and are afterwards stood out of doors covered with ashes. As soon as growth appears we remove them to a cold frame, where they are allowed to grow steadily, staking being attended to as it becomes necessary.

I find *Freesias* require careful watering, especially before the pots are filled with roots, when a little weak liquid manure benefits them. This may be continued with advantage till the bulbs are almost ripe. To

insure good flowers the following year the bulbs must be thoroughly matured in the sun—in fact, they will almost stand baking.—ASPIRANT.

THE KITCHEN GARDEN.

How beneficial it would be for us to leave the glass structure for a time and take a turn at that important branch of all establishments—viz., the kitchen garden. Generally speaking it is feared this is too much neglected by young gardeners. Perhaps a cursory glance at the growing crop is all that is bestowed, and the exclamation follows, “Oh! it's only a row of Peas or Beans, or a plot of Cabbages, as the case may be; of what use are those things to us?” Has it ever occurred to us of what importance in after life a knowledge of this branch may be? I am afraid to some of our craft it may seem “lowering” to study the kitchen garden, but calling to mind a few of our prominent men, shall we not find them excellent practitioners in it? and hence its importance to young gardeners. Where is the loss? None whatever; on the contrary, a great store of knowledge if we will but gather it.

It may not have been given to us all to take our turn with the spade. Could we not make up for shortcomings by a general observation of the operations in the kitchen garden? The year is not too far spent if we commence at once. True, many seeds will have been sown, but we should take stock of the time of sowing, distances of rows, and note the results, making an entry in a diary kept solely for the purpose. As we get up to date we should take a turn round the kitchen garden each evening, observing the different operations of the day. By so doing we should obtain a thorough insight into the system of kitchen gardening, at the same time learning the names of the several vegetables. How useful it will be for us to know the season different varieties of Cabbage, Cauliflower, Broccoli, and Peas came into use for the table, calculating the time from the sowing of the seed, and entering in our diaries. As autumn comes on we should note the different methods of lifting roots and storing, also the structures they are stored in.

What shall we not learn in the season from noting the different methods of preparing the ground for the reception of crops, the site for this and that, why this piece of ground is trenched, and the benefits derived from it? We could in this latter case advantageously study the subsoil of our garden. Then there are the various methods of manuring and manures, and a very important item, the rotation of crops. We must not forget the forcing of different vegetables. Potatoes, Seakale, and Asparagus, for instance. We shall learn much from observing the ways of so doing. My subject is an extensive one—one that young gardeners must not lightly deal with. It requires perhaps more study and energy than we think, but we may overcome all obstacles by diligent perseverance, and should strive to make it our endeavour to hold our own against all comers in the days to come.

Yet another item, and not a small one. There is generally outside fruit culture in connection with the kitchen garden. We may be excellent practitioners under glass, but how would some of us shape if told to take charge of the outdoor department? We should endeavour to get a good insight into this, it will be useful in the long run.—SEMPER.

BANANAS, OR MUSAS.

THERE are two ways of growing Bananas—namely, in borders and in pots. They do well both ways, but I think borders are the best—at least, better fruit seems to result from them. In making the borders have them, if possible, about 36 inches deep. Provide about 10 inches of drainage, and if there are a couple of hot-water pipes in the rubble for bottom heat, so much the better. Over the drainage place inverted turves, as if for a Vine border, and fill up with a compost of mellow fibrous loam, which has had a good sprinkling of crushed bones and lime rubble added to it, leaving about 4 inches for water. Leave the suckers on the old plants till about a foot high, and then pot, using pots according to the amount of roots detached, not crowding, and potting moderately firm. When well rooted, but before getting root-bound, plant in the borders, making the soil fairly solid. If the borders are occupied until they are vacant the plants must be repotted, or they will receive a check. Copious supplies of water are required during the growing period, but a sodden condition of the soil must be carefully avoided during the winter months. With the exception of the one or two suckers required, keep off all unnecessary ones, as they greatly weaken the larger plants. Provide new borders for every fresh plantation.

Whenever the weather permits syringe thoroughly twice a day, maintaining a warm moist atmosphere. Keep the temperature at a minimum of 70° by night, dropping it to 65° in very sharp weather, allowing a rise of 5° by fire and 10° by sun during the day. Give air at 80°, increasing gradually, closing and syringing as soon as it falls below 80°. Damp down regularly, not omitting to do so during the last round at night.

Feed the plants slightly, and seldom, until the fruits are well set, then gradually increase the nutriment. Liquid cow manure I have found the best to use, with a change now and again with some well proved chemical fertiliser. Keep the house rather dry when the plants are in bloom, tapping them lightly with the hand about midday. The plants vary in arriving at maturity, and I do not know that there is really any specified time during which a sucker will produce fruit.

When the fruits assume a golden colour, and with a slight pressure of the hand can be parted from the fruit-stalk, they should be taken off as they ripen and laid on a sunny shelf for a few days in a warm house, when they will develop their maximum flavour. As soon as the fruit is all gathered throw the old plants away. *Musa sapientum* is the most commonly grown, but *M. Cavendishi* succeeds in a little less heat. Now, Y. G. D. Banana growers, let us know the quickest record of growing and fruiting the plants.—TIM.



FRUIT FORCING.

Cucumbers.—Plants in houses and hot-water heated pits must be syringed twice a day, but let it be done judiciously. The dusting of the pipes with a little flowers of sulphur usually suffices to keep red spider and white fly in subjection and also prevents fungi spores from germinating. Plants growing in manure-heated frames will not need syringing so often; a sprinkling at closing time will be sufficient on bright days, and not at all when the weather is dull. Give liberal, but not unnecessary, waterings of liquid manure at the mean temperature of the house to plants in full bearing. Avoid overcropping and overcrowding the growths. Attend to the necessary stopping, thinning and tying, keeping a succession of fruit growth. No more fire heat should be used than is absolutely essential. Make another planting if necessary, so as to maintain a supply of fruit exceeding rather than equal to the demand.

Melons.—*Early Plants.*—When the fruit begins ripening lessen the supply of water at the roots, but not so as to distress the plants, for if the foliage has been kept clean and the roots are in good condition a second crop may be had. Withhold atmospheric moisture, or rather keep water from the fruit, and provide a circulation of dry, warm air, increasing the temperature to 70° to 75° artificially, and 80° to 90° with sun heat. Cut the fruits before they are very ripe, keeping them in an even temperature for two or three days. If any fruits show a tendency to crack, cut the shoots about half way through with a sharp knife a few inches below the fruit, and diminish the supply of water at the roots and in the atmosphere, leaving a little ventilation constantly to prevent moisture condensing on the fruit.

Succession Plants.—Continue fertilising the flowers when fully expanded, the atmosphere being kept drier and warmer and ventilation carefully attended to. Stop the shoots at the time of fertilisation one or two joints beyond the fruit. Earth the plants with some rather strong and rich loam after the fruits begin swelling, ramming it firmly, to secure solid fruit, and place a little fresh lime round the collar to prevent canker. Plants swelling their fruits may be syringed in hot weather about 3 P.M., damping the floor several times a day, and in the evening sprinkle the floor with weak liquid manure. Shade only to prevent flagging, and ventilate freely in favourable weather. Maintain a day temperature of 80° to 85°, or 90° with sun heat, closing between 80° and 85°, and if an advance of 10° or 15° be made after closing it will assist the fruit in swelling, and lessen the necessity for fire heat at night, but it must be accompanied by atmospheric moisture. If thrips appear fumigate moderately on two or three consecutive evenings, taking care to have the foliage dry.

Train the growths out in pits and frames, still maintaining a good bottom heat by linings, and employ thick night coverings over the lights. Sow seeds for raising plants for placing in pits and frames as they are cleared of bedding plants. Add more soil to the hillocks as the roots push through the sides of the mounds, which must be repeated at intervals until the allotted space is filled. Any young plants that are likely to become root-bound should be shifted into pots a couple of sizes larger to keep them in steady progressive growth until the beds or hillocks are prepared for them.

Peaches and Nectarines.—*Earliest Forced House.*—On early varieties the ripening fruit and foliage must be kept dry, but the border must not be allowed to become very dry. As the fruit of the later varieties will not be ripe for some time, keep the atmosphere moist by frequent sprinkling during the day, syringing in the morning, and again when closing the house. The night temperature will be perfectly safe at 65° to 70°.

Fruit Stoning.—During the stoning process the trees must not be hurried, 60° to 65° at night is ample, and 70° to 75° by day, avoiding sudden fluctuations. A little air admitted at night will prevent the deposition of moisture on the foliage to any serious extent, and may be increased when the sun acts on the house, yet without lowering the temperature, which should always advance with the increased power of the sun and a corresponding increase of ventilation. Avoid fumigation as far as possible, as it dries the atmosphere, and not unfrequently cripples the foliage. Early closing is to some extent an advantage, but it must not be continued too long. It is also advisable to allow a little extra latitude to the growth, but on no account permit foliage to be developed that must afterwards be removed in quantity. Keep the inside border well supplied with water, and feed judiciously with potassic and phosphatic foods.

Trees Swelling Their Fruits.—These swell most at two periods—viz., after setting until the commencement of the stoning process, and after stoning. The first is materially, if not entirely, influenced by the previous storing of matter in the trees and the available food in the soil. A genial condition of the atmosphere accelerates the swelling of the fruits and the means employed to secure good root action, which is best effected by a judicious and gradual regulation of the growths by the processes of disbudding and thinning the fruits. Overcrowding is a great evil, but large reductions of foliage at one time as well as fruit are not good. The more vigorous the tree the greater is the danger of the fruit being cast in stoning, and the evil is afterwards increased by severe disbudding, also by a close and moist atmosphere. In the last swelling after stoning tie the shoots down, so that the fruits may be fully exposed to the light, but moderate extension of the lateral growth will materially assist the

fruit in swelling, care being taken that the principal foliage and fruit be not interfered with. Supply water thoroughly to inside borders when necessary, and liquid manure to weakly trees.

THE KITCHEN GARDEN.

Broccoli.—As stated on page 335, early sowing of main crop and late Broccoli is far from desirable in many cases. If it has been done there ought to be no delay in pricking out the plants in fine soil and an open position, disposing them not less than 4 inches apart each way. All plants should be moved to their final quarters with the aid of a trowel, saving a ball of soil about the roots. By sowing the seed late in April, thinly, either broadcast or in drills, and quite in the open, abundance of sturdy plants should be ready for putting out quite as soon as wanted. Chou de Burghley or Cabbage Broccoli also gives the greatest satisfaction when raised late. At this date, however, there must be no failures, and in order to preserve the seed from small birds, either moisten them in a cloth and roll in red lead prior to sowing, or net over the seed beds. Directly the seedlings show through the soil dust with soot and lime to protect from slugs and flea.

Retarding Broccoli.—Hot days have brought on Broccoli faster than desirable, and gluts are complained of. In a few days the bulk will be either used up or spoilt, and when Broccoli is most wanted, owing to a dearth of other vegetables, it will be scarce. Model, Latest of All, Late Queen, and other extra late varieties may be retarded somewhat by carefully lifting, saving as much soil as possible, and laying in on a north border. According as each line is laid in give the roots a good watering. Cover with mats while the sun reaches the border.

Kidney Beans.—Early breadths of these frequently produce much appreciated crops. They may be grown on a flat ridge formed at the foot of a south wall and also on a south border. Sion House, Ne Plus Ultra, and other extra early varieties are the best for this sowing. Sow the seed thinly in drills 18 inches apart. If it can be done protect the plants during cold nights with benders and mats.

Broad Beans.—Only the Broad Windsor type should be sown at this late date. If the early sown seed has come up badly fill up blanks, Broad Beans transplanting readily in showery weather. Mould-up advancing rows lightly to steady the plants.

Beet.—The strong growers, including Pragnell's Exhibition, are best sown late, as it is a preventive of coarseness of root. The same remark applies to the Turnip-rooted type where this, owing to the shallowness of the ground, has to be grown for storing. Beet should have a freely worked, finely divided soil, and if any solid manure is dug in it must be buried deeply, or forking of roots may occur. Sow thinly in drills 12 inches to 15 inches apart.

Celery Beds and Trenches.—Trenches are not indispensable for Celery. Some of the finest produce seen at the summer shows is grown either on the level ground or on raised beds enclosed by stakes and boards. Prepare the ordinary garden soil by freely mixing with it well decayed manure, fresh loam if it can be spared, and charred soil and ashes from a garden slow fire. In this well prepared plants may be put out 15 inches apart each way, doing this early in May. The blanching is cleanly effected by bandages of brown paper. Trenches for growing either early or maincrop Celery should be got ready early now, as this admits of the work of planting being done expeditiously, and affords an opportunity for cropping the ridges between the trenches with Kidney Beans and Lettuce. Celery forms a good succession to Borecole, Brussels Sprouts, and Broccoli. The trenches may be 15 inches to 18 inches wide, allowing the greater width when the Celery is to be planted in double lines. Spaces 4 feet wide between the trenches are not too much, especially if they are to be cropped. The trenches should not be deep, particularly in the case of cold clayey soils. Move the top spit and distribute this evenly between, leaving the loose soil or shovellings in the trench. Fork a liberal dressing of nearly decayed manure into the trench.

Seed Failures.—Failures to secure a good even plant are not always due to bad seed. More often than not the cultivator is at fault, sowing the seed too early, or not protecting sufficiently from enemies. If there have been failures commence remedial measures at once. It is somewhat late to sow more Onion seed in the places where that first sown has failed, but when the seedlings are about 4 inches high they transplant readily in showery weather. The long-rooted Beet transplanted rarely forms good roots, but if more seed is sown where the blanks occur directly these are seen appearances will be saved, and serviceable roots probably result. The Turnip-rooted transplants fairly well, and may be employed for filling up gaps. Carrots move badly, and more seed should be sown where failures occur. It is not yet too late to start afresh. After the middle of May Nantes, Horn, Model, or Guerande may well be sown in preference to coarser varieties, the roots of these keeping admirably. If the seed is sown in drills 10 inches apart, and the plants not severely thinned, a surprising weight of roots of superior quality can be had from quite a small breadth of ground. If more seed of either Salsafy, Scorzonera, or Chicory has to be sown, take extra pains with the preparation of the ground, making this very fine, and not forgetting to moisten the drills if dry. Even Parsnips may yet be sown with a good prospect of serviceable roots being obtained. If whole breadths of Turnips are eaten by the flea, hoe over the ground and sow more seed at once, and at the same time apply a light sprinkling of guano or a dressing of soot. Small sowings of Turnips at short intervals are preferable to sowing larger breadths less often. It is not yet too late to sow Parsley, strong young plants transplanting well. Lettuces should now be sown at intervals of a fortnight or so where the plants are to heart in. Sowings may yet be made of early Broccoli, autumn Cauliflower, Borecole, Brussels Sprouts, and Savoy Cabbage. Avoid sowing thickly.

THE BEE-KEEPER.

DYSENTERY.

BEES, like animals, are subject to disease, and one of the commonest is dysentery. Bee-keepers have often themselves to blame if troubled with it to any serious extent, as it is caused by carelessness in a variety of ways. Dysentery usually appears during late winter or early spring, and stocks may be known to be affected with this disease when the combs and floor board are covered with a chocolate or yellow disagreeable smelling excrement voided by the bees. Also when the bees take a flight on fine days they soil everything in the neighbourhood of the hives.

Bees after a long confinement in winter, will at the first opportunity take a spring cleansing flight, when the ordinary faecal matter will be much in evidence in the neighbourhood of the apiary. If bees are in good health in well constructed hives, and are able to take a flight occasionally, they will not disfigure their surroundings again. The case, however, is quite different when the bees have dysentery, as the faecal matter gradually becomes darker in colour, and if steps are not taken to cure the disease the bees will succumb. If a colony of bees is so reduced in numbers that there are not sufficient to keep up the temperature of the hive, and those that remain are swollen and scarcely able to leave the hive, it will be of little benefit uniting them to another colony, as they would probably not recover. If the combs are very much soiled it will be an advantage to melt them down, but if the frames are in good condition they may be used again.

CURE FOR DYSENTERY.

If the affected bees are in a frame hive they are much more easily manipulated than when they are in a straw skep. They should be examined during the warmest part of the day. Have a warm dry hive close at hand, into which should be placed all combs containing brood (if any) and sealed stores, but not more than the bees can cover. The division board may be drawn close up to the combs, and the whole covered with several thicknesses of warm material, the stock being placed on the same spot as the original hive occupied. Feed with warm syrup daily, only giving sufficient for their daily requirements. It is much better to give them a little each evening than to supply them with a greater quantity, so that they are unable to carry it down for several days, when it will become quite useless for the purpose for which it was intended.

Warm weather has a great effect on bees troubled with this disease, and if the above instructions are carried out the benefits arising from it will be apparent in a few days. A dry hive, warmth, and good food are the chief essentials in building up a strong colony from an affected stock. Owing to the mild open winter there has been much less dysentery than usual amongst the bees. It has only been observed in a few instances this spring, and in each case it could be accounted for, not from a damp hive, but owing to late feeding last autumn.

SPREADING BROOD.

There are few bee-keepers in the country who keep their bees in the modern frame hive who have not at one time or the other tried their hand at spreading brood. In case this question may not be understood by all, we may briefly state that spreading brood is practised by bee keepers in their attempt to fill the hive with bees and brood more rapidly than would be the case if the bees were left to themselves. How is this done? By closing up the division board to the combs covered by the bees, and every few days placing a frame of fully drawn out comb or foundation in the centre of brood nest. Others, again, place the empty comb on the outside next to the comb containing brood and eggs. This plan is preferred to the former, for if extra combs have to be added it is better to place them outside of the brood nest than in the middle, which would have the effect of separating the bees, and if a cold night should set in they would cluster closer together, and the brood in the outside combs would be chilled.

We have experimented under both systems on many occasions. The first time the former plan was adopted. In one hive the bees were fed with warm syrup daily, and as it was a fairly strong colony and the weather was finer than usual at that time, success crowned our efforts. The other hive, although treated in the same manner as regards stores the previous autumn, was much better off for sealed stores at that date (end of April), so instead of feeding them the same as the bees in the other hive, a few inches of stores were uncapped or bruised, which is quite sufficient every other day, and a frame of comb given as required was rapidly filled with brood. They both stored a surplus; but as there is so much danger attached to the operation, we do not recommend it. If the bees are supplied with ample food, and there are sufficient frames outside the brood nest, the bees will take possession of them when it is necessary to extend their brood nest.

Bees will not increase at a rapid rate if left to chance and are short of stores; thus it is that some bee-keepers recommend spreading brood so strongly is owing to the fact of attending to their bees, and supplying them with the necessary food when required. — AN ENGLISH BEE-KEEPER.



TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers; but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Daffodils from Sandy Soil (R. C. Notcutt).—The flowers you have sent are remarkably good as produced by plants in sandy soil. The different varieties are well represented and the colours bright and clear. The other flowers are unnamed varietal forms of *Pyrus* or *Cydonia japonica*, and not uncommon.

Uriah Pike Carnation (J. P. Leadbetter).—You ask our opinion as to any merit the bloom you have sent may possess. It is more than 4½ inches across, and the outer petals 1½ inch in diameter. It thus possesses what some persons regard as a great merit—size. As the bloom is "one of many of similar dimensions," it is perhaps a sport—a sort of *Uriah maximus*.

Andromeda Poisonous (Enquirer).—Your experience is unfortunate but interesting. You say, "Several sheep have died, and on their examination it was found they had eaten leaves of *Andromeda floribunda*." There is a record of thirty-seven sheep being poisoned by this species in America, of which it is a native, and though the animals were subjected to treatment, eighteen of them died. *Andromeda ovalifolia*, a native of Nepal, is poisonous to goats which eat it, and *A. polifolia*, a native of the North of Europe, is fatal to sheep. It may not be generally known that another Ericaceous plant, *Kalmia latifolia*, is distinctly poisonous. It is a native of North America, and it is said that the Indians used to prepare a decoction of the leaves to destroy themselves; and it is further stated that in consequence of the flesh of partridges and pheasants which have fed on the leaves having been eaten, that two cases of death are recorded. The green growths of *Azalea pontica* are said to be fatal if eaten by cattle and sheep.

Chemical Manure for Roses (J. H. Doyle).—Chemical manures are not generally used by rosarians in England. They rely mainly on natural manures, those from piggeries and cow-sheds being preferred, the latter especially for dry soils. An occasional dressing of lime is given in addition, and perhaps no finer Roses are obtained than by the long proved methods indicated. Still, undoubtedly chemical manures are of great service to Roses, not instead of natural manures, but supplementary to them, unless the soil be rich in vegetable matter. Elaborate formulæ are more imposing in appearance than essential, and cannot be equally applicable to all soils. If you can obtain basic slag, and add half a pound of it with a dressing of ordinary manure for trenching well down into each square yard of land, it will be of permanent value. As a general application, if you use two parts superphosphate of lime and one part either sulphate or muriate of potash, whichever you can best obtain, or in the absence of either kainit, and apply at the rate of 4 ozs. to the square yard just before the buds start in spring, then when growth is in progress apply less than half the amount of nitrate of soda if the ground is of a hot dry nature, or sulphate of ammonia if it is the opposite, your Roses will be materially assisted. During dry summers, which we have heard are prevalent in Tasmania, mulching with manure, to remain on the surface to decay, would be of great advantage.

Propagating Poinsettias (*G. O. L.*).—If the old stems are cut into lengths of two joints, inserted in sandy soil, and placed in a warm house, they will soon commence growing and form roots. This is probably the easiest way of raising these plants. When cuttings of young shoots are preferred, place the old plants in heat and keep them well syringed until growth commences. When the shoots are 3 inches in length slip them off with a sharp knife and insert them singly in thumb pots, placing a little sand at the base of each cutting. If kept close and shaded from the sun under hand-lights they will soon emit roots.

Asphalt Path with Cold Coal Tar (*Somerset*).—It is necessary to boil the coal tar in order to prevent its running on to the Box edging, and the material with which the tar has to be mixed when boiling must be perfectly dry, otherwise the asphalt will not set hard. The use of eold or unboiled gas tar is sometimes advised for forming garden paths in the manner you describe, and though it answers for keeping down weeds in places where there is nothing to injure by the tar coming into contact, the practice cannot be recommended when the edgings are Box, especially as the paths will be narrow. The tar sinks into the soil, and the tar water proves injurious to vegetation. The cost of an iron copper is not great, and with it and a few bricks, also the requisite fuel, you may easily boil the tar, which we advise, as we have found unboiled disastrous to "live" edgings, and besides, paths made with it turn soft in hot weather. Of course it must be used cold, or nearly so, on the path or about the edging.

Stokesia cyanea (*M. F. M.*).—If planted in light warm soil in favourable situations it will expand its profusion of lavender blue flowers some 2 or 3 inches across during the month of October. When the soil is cold or stiff it is best grown in pots plunged in ashes during the summer, when it may be introduced into the cool greenhouse, there to expand its blossoms. It grows 2 feet high, and is a first-class perennial. It is not easily increased by division owing to the tufted or conglomerate growths on the rootstock. So closely are they packed in that they cannot be separated without considerable sacrifice. It is, however, readily increased by root cuttings, and as roots may be had in plenty there is no reason why so good a plant should not be more generally grown. This may be accounted for in a measure by its lateness in flowering, when visits to nurseries are less frequent than in the spring and summer months. By lifting a plant and selecting some of the strongest roots a good stock may be secured. Cut the roots into lengths 2 inches or thereabouts, and insert them round the inside of pots in sandy loam, leaving the top just visible. By placing them at once in brisk heat good plants may be secured by the ensuing autumn. In two or three weeks or less time, according to the heat they have been subjected to, they will commence to break freely from the apex of the root cutting, and when of sufficient size they should be moved to a cooler place, subsequently potted and hardened.

Cucumbers Gumming (*H.*).—This serious disease generally arises from an excess of nitrogenous matter, in conjunction with considerable moisture at the roots, and in an atmosphere unfavourable to evaporation from the parts above ground, hence very common in manure-heated pits and frames late in the summer, and at other times when the temperature rules relatively low. The application of linings in such cases usually affords prompt relief, especially if accompanied with a little air. This malady also appears in houses under similar circumstances, the bed or border compost being too rich in nitrogenous matter, in proportion to the available phosphoric and potassic elements, hence a top-dressing of these acts beneficially, especially with a somewhat higher, and in consequence relatively drier atmosphere. Under the circumstances you describe we have found a light top-dressing of dissolved bones, dry and crumbling, three parts, sulphate of potash one part, and sulphate of iron and magnesia in equal proportions, a quarter part, mixed, using 2 oz. of the mixture per square yard, and preferably with a little soil, especially if the roots are on the surface. This will wash-in, and may be repeated every fortnight or three weeks. But the main point is to maintain a brisk temperature, say 70° to 75° at night, and in the daytime a rise to 90°, 95°, or 100° with sun. The moisture need not be reduced, and certainly not increased, but still maintain genial atmospheric conditions to insure the proper development of the fruit and keep the foliage in health. In the matter of root moisture supply water moderately, and only when required to maintain the foliage fresh and promote a steady progressive growth. Rely most on the high temperature, and the plants will grow out of the disease unless otherwise affected.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*A. T. P.*).—1, *Cydonia Maulei*; 2, *Prunus Pissardi*; 3, *Kerria japonica flore-pleno*; 4, *Cerasus* (*Prunus*) *Padus*. (*B. H.*).—1, *Omphalodes verna*; 2, *Primula japonica*; 3, *P. farinosa*; 4, *Doronicum plantagineum*. (*H. G. A.*).—1, *Odontoglossum excellens*; 2, *Cypripedium villosum*. (*J. O. N.*).—1, *Doronicum caucasicum*;

2, *Triteleia uniflora*. (*M. E.*).—1, *Ansellia africana*; 2, *Adiantum pedatum*; 3, *Woodwardia angustifolia*. (*F. V. F.*).—1, *Begonia ascotensis*; 2, *B. metallica*; 3, *Doronicum plantagineum excelsum*; 4, *Lyeium europeum*. (*W. L.*).—1, *Phlox setacea*; 2, *Spiraea hypericifolia*; 3, *Holboellia latifolia*. (*J. H.*).—1, *Pteris umbrosa*; 2, *Cystopteris fragilis*; 3, *Pteris tremula*; 4, *Davallia canariensis*; 5, *Adiantum tenerum*; 6, *Cibotium Scheidei*. (*J. T. D.*).—1, *Euonymus latifolius variegatus*; 2, *Lonicera tatarica albidiflora*; 3, *Amelanchier botryapium*.

COVENT GARDEN MARKET.—APRIL 27TH.

FRUIT.

			s. d.	s. d.				s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	...	...	1	6 to 4	0	Grapes, lb....	...	...	2 0 to 3 0
Cobs ...	...	...	21	0	2 6	Lemons, case ...	...	...	11 0 14 0
Filberts, 100 lbs.	...	...	0	0	0 0	St. Michael's Pines, each	...	...	2 6 5 0

VEGETABLES.

		s. d.	s. d.			s. d.	s. d.
Asparagus, per 100 ...	...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4	
Beans, $\frac{1}{2}$ sieve ...	...	0 0	0 0	Onions, bushel ...	3 6	4 0	
Beet, Red, doz. ...	...	1 0	0 0	Parsley, doz. bnchs....	2 0	3 0	
Carrots, bunch ...	...	0 3	0 4	Parsnips, doz. ...	1 0	0 0	
Cauliflowers, doz. ...	...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0	
Celery, bundle ...	...	1 0	6 0	Salsafy, bundle... ..	1 0	0 0	
Coleworts, doz. bnchs. ...	...	2 0	4 0	Scorzonera, bundle ...	1 6	0 0	
Cucumbers... ..	...	0 4	0 8	Seakale, basket... ..	1 6	1 0	
Endive, doz. ...	...	1 3	1 6	Shallots, lb. ...	0 3	0 0	
Herbs, bunch ...	...	0 3	0 0	Spinach, pad ...	0 0	0 0	
Leeks, bunch ...	...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9	
Lettuce, doz. ...	...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9	
Mushrooms, l ...	...	0 6	0 8	Turnips, bunch... ..	0 3	0 4	

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36	0	Ferns, small, 100 ...	4 0 to 8 0
Aspidistra, doz. ...	18	0	36 0	Ficus elastica, each...	1 0 7 0
Aspidistra, specimen ...	5	0	10 6	Foliage plants, var., each	1 0 5 0
Azalea, per doz. ...	24	0	36 0	Genista, per doz. ...	6 0 9 0
Calceolaria, per doz. ...	8	0	12 0	Lilium Harrisii, doz....	12 0 18 0
Cineraria, per doz. ...	6	0	9 0	Lycopodiums, doz. ...	4 0 6 0
Dracæna, var., doz. ...	12	0	30 0	Marguerite Daisy, doz. ...	6 0 9 0
Dracæna viridis, doz. ...	9	0	18 0	Mignonette, doz. ...	6 0 8 0
Erica Cavendishi ...	18	0	30 0	Myrtles, doz. ...	6 0 9 0
„ various, per doz. ...	12	0	24 0	Palms, in var., each...	1 0 15 0
Euonymus, var., doz. ...	6	0	18 0	„ specimens ...	21 0 63 0
Evergreens, var., doz. ...	4	0	18 0	Pelargoniums, scarlet, doz.	4 0 6 0
Ferns, var., doz. ...	4	0	18 0		

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.					
Anemone, dozen bunches	2	0 to 4	0	Mignonette, doz. bnchs....	2	0 to 4	0			
Arum Lilies, 12 blooms ...	3	0	4	0	Myosotis, dozen bunches...	2	0	4	0	
Asparagus, Fern, bunch...	2	0	4	0	Narciss, dozen bunches ...	1	0	3	0	
Azalea, dozen sprays ...	0	6	0	9	0	Orchids, var., doz. blooms	1	6	12	0
Bouvardias, bunch ...	0	6	0	9	0	Pelargoniums, doz. bnchs.	4	0	6	0
Carnations, 12 blooms ...	1	0	3	0	0	Polyanthus, doz. bunches	1	0	1	6
Daffodils, doz. bunches ...	2	0	6	0	0	Primroses, dozen bunches	0	9	1	0
Eucharis, doz. ...	3	0	4	0	0	Roses (indoor), doz....	0	6	1	6
Euphorbia jacquiniæflora,						„ Red, per doz. ...	2	0	4	0
per bunch ...	1	0	2	0	0	„ Tea, white, dozen ...	1	0	2	0
Gardenias, doz....	1	0	3	0	0	„ Yellow, doz. (Perles)	1	0	2	0
Geranium, scarlet, dozen						„ Safrano (English, doz.	1	0	2	0
bunches ...	4	0	6	0	0	„ Pink, dozen ...	3	0	5	0
Lilac (French), bunch ...	3	6	4	0	0	„ Smilax, bunch ...	2	0	3	0
Lilium longiflorum, 12 blms	2	0	3	0	0	Tulips, dozen bunches ...	2	0	4	0
Lily of the Valley, 12sprays	0	6	1	0	0	Violets, dozen bunches ...	0	6	1	0
Maidenhair Fern, dozen						„ Parme (French),				
bunches ...	4	0	8	0	0	bunch ...	2	6	3	6
Marguerites, doz. bunches	3	0	4	0	0	Wallflowers, doz. bnchs....	1	0	3	0



A SATISFIED GRUNT.

A GOOD grumble is the farmer's privilege, and we doubt not that the spirit of dissatisfaction which is his most distinguishing trait has had much to do in alienating the sympathy of other classes when the farmer has had real woes and good cause for grumbling.

Of course, the favours of fortune are not always evenly distributed, and a season that may be the reverse of favourable in some districts may be far above the average in others. The agricultural year just closed may not have been the best from the grazier's point of view, but we fancy that the occupiers of mixed farms will, as a body, acknowledge that, for them at least, things have taken a turn for the

better, and though they may be reluctant to answer inquiries with anything but a grunt, still it may sound like a grunt of satisfaction.

Last year's cereal crops were, taking them all round, hardly as good as those of 1896. Wheat was not so good, Barley was fair, and Oats decidedly deficient. Wheat was rather thin of plant, and made a bad start, but we have found that the yield of grain was better than we expected; and though nothing above the average, yet when reckoned up at the much improved prices that have ruled, the net return per acre is the best we have had for many years.

Barleys were fairly bulky in straw, and were very fine in quality. The yield, though fair, was much reduced by want of rain at a critical time, the grain not being finished as it should be. Ours is only average Barley soil, being rather liable to suffer from drought. An average price, however, of 32s. is nothing to grumble at, and here, again, the return per acre shows great improvement.

The Oat being a moisture-loving plant, it is not surprising to find the crop below the average; it suffered from drought in the earlier stages of growth, many shoots becoming blind, and never producing an ear at all. This naturally diminished the crop considerably. On thrashing, however, we find the yield not so bad, and the price, 22s. per quarter, helps the return to cut quite a respectable figure. Facts speak for themselves, and when we find that our grain crops have produced £2 10s. per acre more this year than last, we cannot but look on this result as eminently satisfactory.

Improvement in prices has been the chief factor in bringing about this happy result, and low prices are what the British farmer has been suffering from most, for neither farmers nor anyone else can go on producing at a loss for any length of time.

Potatoes were much below the average, only two or three kinds giving fair returns as to crop. Up to Date was far the best, being just double the weight of Bruce growing by its side. Imperators did fairly, as did Reading Giant, but the latter showed great tendency to disease. Small crops and light market supplies have resulted in much higher prices, which large foreign importations have been almost powerless to affect.

Farmers who were satisfied with £3 per ton, and sold out at that price before Christmas, would not find their pockets very well lined. Four tons per acre was this year more than an average crop, and though £3 per ton was an improvement on the price of the previous season, yet 4 tons at £3, or £12 per acre, was not enough to pay the grower and give him a profit.

Those, however, who had an eye for statistics, and could form a good estimate of the Potato crop of the United Kingdom, have, by acting upon the knowledge thus gained, made a very fair thing out of their Potato harvest. A sudden rise to £5, and even as much as £6 for extra quality, took place about Christmas time, and though the foreigner stepped in and damped things down a little, prices never fell much, and at the time of writing they are as high as ever, with a good prospect of further material rise. Unfortunately farmers have very small stocks left, having been tempted by the bird in the hand—some, in fact many, having entirely cleared out, so that the profit from any further rise must go into few hands. So convinced, however, are we of the certainty of a Potato boom that we are refusing £5 10s. per ton with scorn, and putting our small remaining stock by for another month. We advise others to do the same.

This has been a good year for sheep; last season's lambing was excellent, and though pastures suffered from drought before mid-summer and Turnips were likely at that time to be very short afterwards all came right. Winter keep has been plentiful everywhere, and those who had looked forward with dread to a big cake bill and a generally expensive winter have had great cause to rejoice. Sheep have been very healthy, and there have been few losses; the lambing has been again favourable, if the crop of lambs has not been quite as large as last year. Sheep markets have been fairly good all the year until the last month, when, as usual in April, they were overcrowded with Turnip-fed animals. Why farmers should persist every year in keeping all their sheep until April and then pouring them into the markets in three or four weeks has long been a puzzle

to us. We think with a little patience the prices will soon recover. We certainly think the flockmaster has had a good year, or at any rate the chance of one.

Cattle have been the blot on the balance-sheet; animals which were bought at or stood the grower to a good store price twelve months ago did fairly well if fed off grass and turned over quickly, but those who like to produce a good stall-fed bullock or heifer, either for Christmas or later, have indeed undergone bitter disappointment. Prices were very poor in December, but they are even worse now, 6s. 6d. per stone of 14 lbs. being an ordinary price.

This depression in beef prices has not so much affected the price of stores, which are anything but cheap, and promise no margin for profit if the price of meat remains at its present level. Pork has sold fairly, but the enhanced price of foodstuffs must reduce profits here.

Milk, butter, poultry, and eggs have met with much greater competition from home production as well as from abroad, and prices have suffered a little, but the consumption increases as prices decrease, and we cannot complain as long as we get our share of the spoil.

We trust that our little grunt of satisfaction may find an echo from many others who, like ourselves, have found that farming is on the mend.

WORK ON THE HOME FARM.

Since writing last week we had two more very wet days, and although we had wanted rain badly we were rather glad when the weather took up again. The last few days have been fine, with slight morning frosts; the rain has done endless good, land that was rough and dry has fallen like lime, and late spring corn must go in well. Early sown Oats and Barley had felt the frosty nights; the rain has had a wonderful effect on these crops, and they are running on fast.

The nitrate of soda came at last, and is being sown on the Wheat. The latter has grown so fast and looks so well that a neighbour suggests that we are using the top-dressing needlessly. May frosts have to be met yet, however, and as the plant is very thick on the ground we think the fillip will be needed after all. Wheat harrowing still continues; it has rather a drastic effect, but Wheat likes knocking about in spring.

Mangolds are going in splendidly, the land is fine and yet full of moisture, and there should be no doubt about getting a plant; 6 lbs. per acre of good seed should be quite enough to sow now. Some people sow a little Swede seed amongst the Mangold, but we do not like the system, as the Swedes, even only a few, seem to have a smothering effect, and Mangold mixed with Swedes never seem to get so large as when they have the ground to themselves.

Grain is getting dearer, and both pig and hen corn are becoming decidedly expensive. Maize, however, can yet be bought at 20s. per 34 stones. This is good food for growing pigs intended for autumn feeding. The Maize should be scattered (unground) in the yard, the animals will then pick it up grain by grain, and thoroughly masticate it, which they will not do if it is given split in a trough. Fine sharps can be bought at 8d. per stone; this as a paste is good for fowls in the morning, and if followed by Maize for the later meals, the fowls will keep healthy and lay well. We are only speaking of farmyard fowls, however, not of such as are kept in confinement.

We have a splendid supply of Mangold, and it is quite astonishing how many the fowls, old and young, can eat if they have the chance.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1898.	April.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun	On Grass	
		inchs	deg.	deg.		deg.	deg.	deg.	deg.	inchs.	
Sunday	17	30.015	46.6	44.6	S. W.	46.5	61.7	35.1	99.8	31.9	—
Monday	18	29.807	46.9	43.1	S. E.	46.1	55.9	38.1	90.4	32.6	—
Tuesday	19	29.929	48.4	44.1	N. E.	46.6	55.6	40.3	89.4	34.6	—
Wednesday	20	30.054	46.3	44.1	E.	46.3	59.6	38.1	84.9	32.8	0.024
Thursday	21	30.213	49.9	46.9	N. E.	46.9	59.1	44.5	97.7	44.4	—
Friday	22	30.138	43.8	39.0	E.	47.0	52.1	35.3	95.2	31.9	—
Saturday	23	30.101	44.1	39.0	N. E.	45.8	55.7	32.9	86.4	28.7	—
		30.037	46.6	43.0		46.5	57.1	37.8	92.0	33.8	0.024

REMARKS.

17th.—Brilliant early; frequently cloudy in afternoon and evening.
18th.—Overcast early; generally sunny after 10 A.M.
19th.—Generally sunny day; fine night.
20th.—Fair with frequent, but not strong, sunshine.
21st.—Generally cloudy till noon; bright afternoon.
22nd.—Overcast morning; sunny at times after 2 P.M.
23rd.—Sunny almost throughout; bright night.
Another average week except that there has scarcely been any rain at this station.—G. J. SYMONS.

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Journal of Horticulture.

THURSDAY, MAY 5, 1898.

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THE SEASON.

Oh, to be in England, now that April's there!
So sang Browning, incited by some vision recalling to the absent poet's mind those charms of spring peculiarly our own. Alternating smiles and tears—warm rays and cold, weeping skies—coaxing and forcing back to life and beauty a thousand things—gladdening all, and filling many with hopes that may never be realised, fears that may be futile. Who shall foretell? One fain would linger o'er the light side of Nature, and enjoy the marvellous beauty of the great transformation ere turning to sterner things, which may have to be faced in the near future, when to tender springing growth and bursting blossom may come the crisis of a cruel May night before the month on which we have just entered is over. Things which may or may not come, but of which a decade gives sufficient data to enjoin the wisdom of being prepared. Hoping for the best; prepared for the worst.

What a fickle jade our April is! so expressively re-named Germinal—the budding month—when the fever-heat of a revolution preyed on the vitals of La Belle France. Bridal wreaths of Blackthorn made a brave show whilst the month was young and coy, and here and there by the river's brim numberless knots on the Willows swelled until they burst into a charming, pale yellow inflorescence, the "Palm" of childhood's days. Broad patches of Anemone fulgens in military splendour bore the breeze of blustering March, and I know of no hardy flower adapting itself so well to the decoration of heated rooms. Our cottagers cultivate them on the sunny slopes, and they are pulled, not cut, for the market, realising, probably, better prices than any other hardy spring flower, not excepting Daffodils. Ill adapting themselves to the ordinary vases, they are charming nestled in bowls of fresh damp moss.

All the big and little trumpets of the great Daffodil family have blown, the sturdy broad-leaved bicolor maximus concluding the concert so far as the trumpets are concerned. Laggard poeticus, sweet and chaste, will not be lured from its late habits, and is the most impatient of the

No. 2588.—VOL. XCVIII., OLD SERIES.

tribe of anything in the nature of forcing. But Primroses—"Oh, they are too common to talk about." Common, I grant you, but is it generally known how charming they are transplanted, making a line or patch of them in some cool, shady part of the kitchen garden? "Kitchen garden and Primroses! Potatoes are more practical." Certainly; and Sutton's Abundance is beyond compare, even so late in the season, with any other variety of the "noble tuber" we have tried, too many of which in our stiff soil have been found wanting. Our cook finds them hard to boil, or soft, rather, coming away in flaky shreds ere the process is complete; so their character has been studied, to the end that they are now parboiled in their jackets, after removing which they are roasted or toasted, which you will, to a light brown, making quite a feature in Potato cookery.

Our cook has never been short of a "Cauliflower," or rather Broccoli, the winter through. The latter name she repudiates—"whatever difference there is they are both alike;" we nearly agree with her. All the members of the Brassica family have been abundant, if a little sportive in character. Ellam's Early Spring Cabbage has been to the fore. A few days since we passed a dozen loads of this good-hearted little friend destined for Glasgow. Last year's crop of the Jerusalem Artichoke was exceedingly good, resulting in a little disappointment to market growers anent prices. We cannot say that the market was glutted with them, but the demand a few years since led some to infer that here there was an opening in a comparatively new direction. Our neighbour now says, "'Chokes don't pay." The high character awarded to Royal Sovereign Strawberry for forcing purposes has been more than maintained. One of the best examples of Strawberry forcing ever met with was that lately seen of a number of this variety in 5-inch pots, it being also remarked that the plants invariably consisted of single crowns, hence the reason, probably, of such unqualified success with a comparatively limited root space. The thanks of all growers are undoubtedly due to the raiser of this fine variety.

One has been a little exercised as to whether this is an early or late season; but after halting between two opinions the balance now turns in favour of earliness, for April the capricious left us wreathed in warm-tinted Apple blossom, striking a deeper note in the galaxy of the white of Pear and Plum and Cherry. Through the woods tower up huge bouquets of the wild Cherry, so beautiful, so fleeting. How profusely and persistently the Cherries flower each year, particularly the wild one, which has no heavy tax of fruit to sap its energies.

Lately, in a neighbouring garden, attention was called to a novelty in Nectarine culture. This was a tree of Elruge, planted in a late house on the back wall, half of the branches having been carried through the partition into an early house on which the fruit was stoning, whilst in the cold division the branches were in blossom. The early portion gives ripe fruit early in June, the remainder being deferred till August. All the fruit from this tree was understood to be of high quality; but a little discussion on the matter still left it, so far as root action was concerned, involved in mystery. A long unheated Peach range flowering in March met with hard times, 10° to 12° degrees of frost being registered outside on several nights. Inside the thermometer went below freezing point concurrently; but a good set is now happily in evidence. A dry atmosphere possibly counteracted the malignant influence, and possibly, too, points a moral in the utility of a little protection for outside trees to prevent the night dews from settling on the blossom.

How glorious is now the Italian garden with the flowers of spring! Lines and groups of *Aubrietia deltoidea*, *A. d. grandiflora*, and *A. Leichtlini* are the most imposing tints imaginable among masses of *Alyssum saxatile* and beds of the best Wallflowers. Primrose Dame, Eastern Queen, Veitch's Selected Yellow leave nothing to be desired so far as those varieties are concerned; but a brighter red Wallflower than anything yet obtained is most desirable. In the shrubberies Persian Lilacs are fast opening; but the fragrant old type, called by our cottagers "Old-fashioned Laylocks," we have still a weakness for. The month passes with all things bursting into life and beauty. Small wonder that the absent poet pined for his native land; but there is, withal, that spice of danger which gives a piquancy to its charms.—INVICTA.

DIPLADENIAS AND THEIR CULTURE.

THE genus *Dipladenia* comprises several species and a large number of varieties, the latter superseding the former by their larger, more highly coloured, and showier flowers. All are so-called stove evergreen twining plants, very ornamental, with flowers ranging from white to pink, and from rose to rosy purple. Few stove twiners are more deserving of general cultivation, as the large flowers of some of the species and hybrids are unrivalled for gorgeous colour, and when in flower must be regarded as amongst the most beautiful of stove plants.

Dipladenias, however, are not by any means commonly cultivated in stoves, but rather specially grown for exhibition purposes, the plants having an ill repute as being liable to attacks of insect pests, such as mealy bug and scale, and in not a few cases they are anything but free in growth. This usually arises from the plants not having sufficient light and heat for their sturdy growth and free, floriferous development. Indeed, they can hardly be considered suitable for ordinary stove treatment and training to rafter wires, as this implies too much shade and too great distance from the glass. Besides, *Dipladenias* are of moderate growth, attaining to a height of 10 feet or thereabouts, hence very suitable for comparatively small houses; and in narrow borders along the front of a lean-to or three-quarter span-roof, preferably over the hot water pipes, attain great perfection. The growths can be trained to roof wires in such cases similar to Vines, but as near the glass as may be without the leaves touching.

Propagation is generally effected by cuttings of the young shoots when the plants commence new growths in the spring, these being taken off close to the branch, made smooth, and inserted in small pots in a compost of equal parts crystal sand and peat, covered with a bell-glass, and placed in brisk bottom heat. Single eyes are also taken, similar to Vine buds, and inserted just beneath the soil in small pots, plunging in bottom heat. I consider the former preferable. Roots in either case will soon be emitted, the eyes pushing shoots and the cuttings commencing growth. They can, if several are placed in a pot, be potted singly, doing this carefully when rooted and returning to the hotbed, keeping them close till re-established. When the young plants have well hold of the soil gradually inure to the air of the house, and grow in ample light, heat, and moisture.

If plants are intended for planting out train to an upright stick until the required stem has been secured, keeping side-growths in close subjection, and when sufficiently advanced plant out. Plants for trellis-training also should be grown without stopping, supporting by a stake until of sufficient size to be placed on the trellis. Give larger pots as necessary; but let the pots be full of roots, without very tightly binding before moving. Late shifting of young plants cannot be advised, as even these are better for a rest in winter.

PLANTING OUT.

I must confess to entire failure with these plants in the ordinary side borders of a stove and training the growths to the rafter wires. The border may have been too large, too shaded, and too wet; the plants did not thrive. In a narrow border over the hot-water pipes, and the growths trained to wires affixed lengthwise of the house to the under side of the rafters, they did splendidly. Over the path the flowers are seen to great advantage, and for cutting in trayfuls are simply unique. No table makes such a sensation as one of *Dipladenias*. The gorgeous flowers tell a tale of unsurpassed brilliancy. Sprays look best; and though that may be extravagant, it pays at times to make a great effort and bring "down the house."

The plants like bottom heat—the warmth from hot-water pipes. They must also have thorough drainage, for no plants sooner go wrong when the soil gets and remains wet. Too much soil and too much water usually bring disaster. Good rough, fibrous, sandy peat, with some "nuts" of charcoal and crystal sand in about equal parts (this mixture constituting about one-sixth of the soil) suits *Dipladenias*. I have tried additions of leaf mould, old cow manure, and turfy loam, but the peat régime best favoured the growth of the plants. A space of border 2 feet square and as much deep, 9 inches of this being drainage, will grow a large plant.

GROWING IN POTS.

The young plants for trellises should be grown without stopping, supporting by a stake until of sufficient size to be placed on the trellis. This is best made of small galvanised wire, and in a conical or globular form. If balloon ought to be painted green, as some galvanised wire kills the shoots, or at least injures them when new. When oxidised or old the wire appears not to do any harm. The plants like a little bottom heat. They root better after the potting, which should be done in the spring; and young plants may be given a shift later, but not after July. The same soil answers for pots as for borders—namely, fibrous peat broken up roughly for use, adding sufficient sand to keep the soil open. Some charcoal also is an advantage, and about a pound of basic slag phosphate to a bushel of

the peat proves advantageous, and, besides many other substances, gives phosphoric acid for promoting floriferousness, as well as iron, for colour.

The potted plants cannot have too much light. It is better to put some pegs in the pot and some nails in the rafter and sashbars, and strain some twine between the two points, training the growths to them instead of securing these to the trellis. The light then shines right into the plant, and draws the flowers from the axils of the leaves or the terminals of the growths in due course. Get these, and then it is easy to tie them to the trellis, as the string draws away easily, so as to cover it with flowering shoots as well at the lower as upper part. If the shoots are tied to the trellis there will be little growth at the base, and too much at the upper part. Better still train the shoots near the glass, and when coming into flower loosen and secure to the trellis.—G. ABBEY.

(To be concluded.)

NARCISSUS WILL SCARLET.

THIS is undoubtedly one of the handsomest Narcissus that has ever been shown, and the Rev. G. H. Engleheart is to be congratulated on its production. The crown measures upwards of an inch in diameter, is deep saucer shaped, and of a particularly rich red colour. Not only has it these good points, but it is of exceptional substance. The perianth segments are creamy white. The plant, we were informed, is an excellent grower, and produces foliage of great breadth and strength. The Narcissus Committee, at the Drill Hall on the 26th ult., gave a first-class certificate to Will Scarlet, of which we present a woodcut (fig. 73). The crown or cup ought to have been depicted as slightly deeper.

NARCISSUS AJAX HODSOCK'S PRIDE.

MR. MALLENDER has very kindly given me an opportunity of seeing this fine bicolor Daffodil, a seedling raised by him at Hodsock Priory, Worksop. It is a bold flower with very large trumpet, with open mouth. The trumpet is clear yellow, and the perianth is sulphur white. The margin of the trumpet is very distinctly serrated and lobed. A sister flower to Hodsock's Pride was also sent; but this is much inferior, although the long trumpet gives it some character. A seedling incomparabilis with a deep orange crown, which should look bright in a mass, was also sent. It is said to be a free bloomer.—S. ARNOTT.

PROFITABLE FRUIT GROWING.

(Continued from page 365.)

WE will now revert to the Vines, which were grown along with the Tomatoes in the house I have previously described. Eyes of Black Hamburgh, Alicante, Cooper's Black, Alnwick Seedling, and Madresfield Court were inserted in 3-inch pots about the middle of February, and brought on in the little forcing house already mentioned. As soon as the pots were filled with roots they were transferred to 5-inch pots. The soil used was from a part of the field where the turf had been taken off, and nothing was added to it. As soon as they were established in the 5-inch pots they were placed amongst the Tomatoes, and though a cold summer, with no fire heat and constant top ventilation, they grew well, and were nice little canes about 4 feet high, with a perfect potful of healthy active roots by August 1st, by which time they were planted in their permanent places on the west side of the span, close to the front. The method of planting was to turn them out of their pots and without loosening the roots in any way, setting them on the border—not in it—5 feet apart. A pailful of fresh soil was put round each ball and made firm with the hand; this left them in little mounds like molehills. They made capital canes that autumn, and got fairly established in the soil. When possible all Vines should be planted when growing, and not out of larger pots than 5 or 6 inches. The following winter they were cut down to 18 inches from the ground.

In spring the borders were thoroughly dug, and as the soil was now deeper and richer, Ham Green Favourite Tomato was planted. The object this year was to have the Tomatoes earlier, and well established and fruiting before the Vines robbed them of any light by their foliage. So they were kept a little warmer than in the previous year—but in no sense forced—to keep the Vines back as long as possible. A hole was bored in the wood which formed the side of the house—opposite each cane—and the points pushed through to the outside, all eyes left inside being removed. They were kept in this position as long as possible, and when taken in they were soon started. One leader was taken up from each, which by autumn was a medium-sized, short-jointed, well-ripened cane—going up one side of the span and down the other, or about 20 feet. A full, good crop of Tomatoes was got from the house this, the second year. The following year the east

side of the house was again planted with Tomatoes, but only one row, and that next the path on the side the Vines were on. Most of the Vines were strong enough this year to have carried a few bunches, but as the object was not to see how soon Grapes could be had, but how to take most out of the house, they were cut back to the bottom Vine, and two leaders instead of one taken up from each. They made very fine canes this year, and were again allowed to grow down the other span. The Tomato crop was not so good this year, as the Vines from June onwards monopolised most of the roof space.

This was the third and last crop of Tomatoes grown in the house, other things being substituted which agreed with shade. From 4 to 5 feet of wood was left for the first crop of Grapes, the next and third year since raising. An average of four bunches was left on each rod, or eight to a Vine of from 2 to 5 lbs. weight. The Madresfields averaged $2\frac{3}{4}$ lbs. with very large berries, not one of which cracked. Though some bunches lost a few berries through being left too tight, the tender skin of this variety going where it was most squeezed, all finished fit for an exhibition table. Many of the Alicante bunches brought from 10s. to 15s. per bunch. These were seen in a shop window by one of the best Grape growers in Ayrshire, and declared the finest Alicantes he had seen. The weight of fruit per foot run on this variety was over

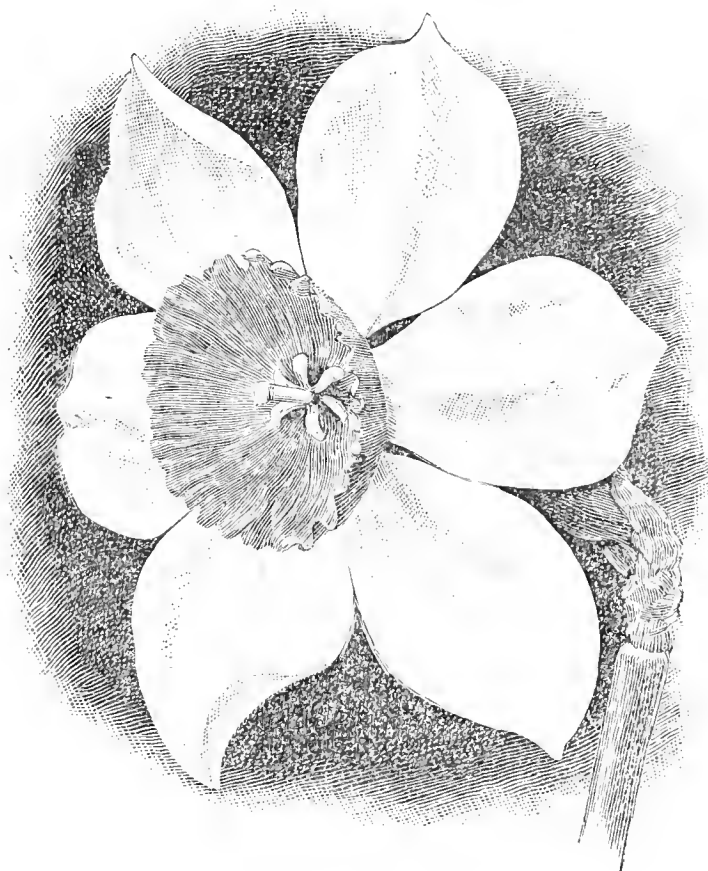


FIG. 73.—NARCISSUS WILL SCARLET.

3 lbs., and they have carried and finished perfectly nearly as much weight per foot for five successive years, and are as strong and vigorous to-day as ever. I may state, however, that this variety has been allowed to extend, occupying each year a larger space, and now fill the other side of the span and going through to fill a similar house built alongside. The bunches in the Alnwick Seedling were the first year much smaller than the others. No difficulty was experienced with the setting of this variety, either in the first or any year since.

I will now state what was done to the borders. The inside one received a few dressings of Thomson's manure annually, and a good mulching of manure just before the Vines broke into leaf, and a few times has had some inches of fresh soil added to raise the border to the level of the mounds where the Vines were planted; and once this mulch was covered over with fresh soil similar to the plan adopted with the first Tomato crop. The roots from the first were encouraged to enter the outside border, which was kept well dressed with manure during the summer. What was left of this mulching the following spring was covered over with a few inches of soil and again top-dressed. This was annually repeated until the border was about twice its original depth. Dressings of Thomson's manure were also given outside, and heavy waterings in a dry summer.

I have endeavoured to place before you as plainly as I can the details of a system of culture by which heavy crops of the finest Grapes and Tomatoes were produced with little or no expense at border making, where not so much as one spadeful of the orthodox turf was at any time used, in a cold bleak locality, 300 feet above sea level, from ordinary farm land, the average value per acre paid by surrounding farmers for such being about £1.

I have now something to say about giving air to a vinery. I do not expect you will all agree with me here, but that may be the

means of your thinking the matter out for yourselves, and testing by practice the soundness of—I was going to say my theory—but it is not theory but sound practice I am to advocate.

The system that has been handed down to us from our forefathers of admitting fresh air to the occupants of a hothouse, by opening both top and front ventilators, is, in my opinion, to use an old Scotch saying, "wrang, far wrang, and a' th' gither wrang." Not only is front ventilation not necessary for Vines, but it is positively injurious. Nay, I will go further, and say that for almost every plant that is usually grown under glass, front or side ventilation is unnecessary, and in many cases injurious. If a strong healthy man were obliged to sit for so many hours each day between two open doors, what would be the result? If a weakly man, who had been coddled in heat all his days did the same, would the result not be more disastrous? So with a house of Vines, which are often too much coddled and stewed. Are they not sitting or growing in the draught of two open ventilators? How can you expect weakly thin foliage to withstand the attack of insect pests when the strong under similar circumstances suffer? I believe that in ninety-nine cases out of a hundred you could trace every attack of red spider on Vines to faulty ventilation. If you take the trouble to watch you will see it begin close to a ventilator, or where a direct draught is blowing. I assume, of course, that no plants affected with spider are in the house. Take the case of the foliage of the Gros Colnau Vine. This variety, though a robust grower with a good constitution, has peculiarly tender leaves, which are oftener seen during the growing season cupped up at the edges and quite brown. The popular belief is that this is caused by the strength of the sun's heat, and obscuring the glass is recommended as a remedy. Well, I have painted the glass more than once over the leaves, but never could say that it did any good; but I have seen Vines of this variety entirely cured by the discontinuance of front ventilation, and keep their leaves as flat and green to the end of the season as any other variety.

Great care and judgment are required in giving air, and though I advocate abundance of fresh air, especially for black Grapes, it should only be admitted from the top.

You need not be afraid of scorching. Vines will stand a high temperature without injury. I once saw a house of early Hamburgs, a lean-to facing south, grown without once opening a ventilator until the Grapes were colouring in May, and not a scorched leaf. I have also seen every kind of fruit, from a Pine Apple to a Strawberry, and every kind of plant usually grown under glass, stove, and greenhouse, flowering and foliage, Ferns and Orchids, grown, and grown successfully, without the use of front ventilation. It is not necessary. We never use it in any house, and we have 40,000 square feet of glass.—D. BUCHANAN.

(To be continued.)

A BRITON IN BELGIUM.

ONE of the many things which strike even a casual student of human nature is that in spite of the fact that most people express an unbounded contempt for every country except the one which has had the privilege of producing them, they nevertheless assume new airs of importance when they return from abroad. Of course this is not so marked in the case of gardeners as in that of common humanity. Gardeners are above ordinary weaknesses of the flesh, and are a select and superior race. But being in the main observant men, not without an eye to the humorous foibles of their fellow countrymen, they must have remarked the inconsistency which I have pointed out.

It is a long time since the first Briton went abroad and returned bursting with fresh importance. It will be a long time before the last one does. When the New Zealander stands on London Bridge surveying the remnants of a fallen empire, he will be accosted by an odd member of the vanished race, just in by the Harwich boat and garrulous about the Ghent Azaleas. Should the disgusted New Zealander disclaim any interest in the Ghent Azaleas, then the returned native will describe the newest Aroid, or his last plate of Witloof. Subsequent events are a matter of conjecture. With all respect to Macaulay, I am of opinion that the Antipodean will retire vanquished from the field, leaving the horticultural Saxon in the full flow of an harangue on the subject of plant grouping, or the superior flavour of Antwerp Radishes over the produce of Little Mudbury.

It is not certain that this peculiarity of the travelled Briton is an unmixed evil. On the contrary, it is quite likely to exercise a beneficial effect. From the biggest bore often falls the most valuable hint. By a comparison of methods the way to improvement is often found. Therefore, although you or I, or the other man, may be regarded as a bit of a nuisance in airing views that are perhaps stale,

a chance observation of practical value serves to redeem a reputation. Would British gardening be what it is if our incessant palavers and scribblings had never been? It is more than doubtful. Perish the thought, therefore, that any apology is needed for a few random jottings, whatever the terrible cynic may say who argues that discussions and papers and articles—everything, in fact, except plain shovelling—are waste of breath, paper, and time. I know he has condemned me beforehand, but I must try and eke out a miserable existence notwithstanding.

Liverpool Street, London, at 8.30 P.M.; Harwich at 10; Antwerp at 9 the next morning—an easy programme of swift train, comfortable steamer, and light charges. There is not a great deal of horticultural interest along the lower reaches of the Scheldt, but the man who varies his gardening reading with history finds other things to attract his attention as the steamer pursues its winding way. There is the spot, for instance, where a band of Alva's soldiery—magnificently brave if magnificently cruel—forced their way through ten miles of mud and water in gloom and fog; rarely in less than 3 feet of water, often with its chilly fingers creeping round their infamous throats, to emerge triumphantly from their terrible ordeal and surprise a Flemish garrison. Motley tells this story, with many another of thrilling interest, in his monumental work, "The Rise of the Dutch Republic." It is not peaceful horticulture—very much the contrary, but it is vivid and absorbing enough to keep the most ardent gardener from his favourite journal far on into the midnight hours. And the end of it will be a deeper thankfulness for the blessings of peace and freedom—a mingling of horror and relief; of terror and admiration; of breathless, awe-stricken loathing for the black records of the past, and of joy for the calm prosperity of the present.

If the horticultural visitor, once off the beaten track of his own particular pursuit, cares to linger for an hour or two amongst the antiquities of Antwerp he may be sure of a rich reward. The Plantin Museum alone will beguile ample leisure. Never say that it has no interest for the gardener; it is full to overflowing. For three centuries Plantin's was one of the most famous printing houses of the world. It produced books of all kinds, from illuminated volumes the cost of which ran to hundreds of pounds each to (no doubt) handbills extolling the merits of the sausages sold by the dealer round the corner. It printed books of botany amongst others, and in its cases are the old woodcuts prepared by engravers long since passed to their rest. So admirable was the work that the plants are recognisable at a glance, and to all appearances the blocks would print perfectly well to-day. A guide who, after several unavailing attempts, had fastened on to me, gave me amazing descriptions of these engravings. As, however, I perceived that he had mixed up a botanical with an astronomical work I excused his confusion of *Lilium candidum* with the Milky Way.

There is a wonderful old Vine on the wall of the picturesque quadrangle said to have been put in by the first printer, Christopher Plantin, more than 300 years ago. Perhaps it was, and if the report is true it is certainly one of the world's famous Vines. True, the reproach may be levelled at it that it has not been grown on the express system; but gardeners of the old school will make all allowances for that. Doubtless if Plantin had been as well instructed in horticulture as he clearly had been in printing he would have brought such astonishing skill to bear upon it that it would have been dead generations ago. My guide, who was about thirty years of age, endeavoured to foist a story upon me that he had been familiar with the Vine since its tenderest years. I thereupon took up with an official one, who produced a poem, sold it to me for a franc and a half, and then abandoned me. The poem, like the Vine, was by Plantin. It set forth the old printer's idea of happiness in this world, and as amongst the items enumerated were a sweet garden, a limited supply of children, and a quiet wife, Christopher must be held in respect as a man of wisdom, judgment, and discrimination. He left a family, though.

The more the visitor sees of this wonderful museum, the more pleased he is that he did not pass it by because it did not happen to be a plant nursery. It is a nursery in a way—a nursery of fruitful thought. The passer-by finds himself back in an old world, the gardens of which were filled with aromatic plants and herbs of marvellous properties. He thinks, as his eye wanders over flower paintings, flower designs for priceless illuminated volumes, and flower engravings for scientific works, of the sedate gardeners of the past centuries. They did not grow Azaleas as he is presently to see them at Ghent; they did not cultivate *Odontoglossums* as he has already seen them at the Temple. Their spring-sown Onions were not of the size of Alva's cannon balls, nor were their Grapes what are shown at Shrewsbury; but—and a big, eloquent, noble but it is—they laid the foundation by their unwearied patience, careful observation, and ever-

burning zeal, for the triumphs their children's children were to see; they made possible the great and inspiring art which horticulture now is.

It would be an inconsiderate act to drag readers, without a particle of interest for thumbscrews or paintings, to Antwerp's other great sights—the Steen Museum and the Picture Gallery. I can only say that, wonderful works of art though many of the pictures are, I found the thumbscrews rather less harrowing; but from both of these terrible records of a stormy past it is a relief to escape, for they exercise a hideous thralldom on the imagination. At the gates of the great museum lie the boulevards and avenues of modern Antwerp—tree lined, as every town street should be; bright, fresh, and cheerful. Perhaps if we could begin our great towns all over again, we might build them so as to admit of at least a modicum of light and air; as it is, we can but envy the continental his broad, airy, leafy promenades, and sigh for the unattainable. Yet an inconsistency insists on presenting itself. British horticulture claims, not without justification, to set a pattern to the world, but it fails completely to lay hold of the consciences of our town councillors and shame them into better ways; so that, even with the new building which is going on, we are perpetuating the bad old system of narrow streets, packed houses, and box-room gardens. There is a simple economic explanation of it all. The continental loves to put his savings into land, the Briton into bricks and mortar. There is no getting over the fact, or the results that spring from it. If you and I had a lot of bricks and mortar, our indignation at the sight of treeless streets would soon go off the boil.

So pleasant are the broad and leafy avenues of New Antwerp that there is less eagerness than is the case in British towns to get away to the suburbs and environs. It is done sooner or later, perhaps, but generally later. Immediately, however, the visitor passes through any of the numerous city gates and past the fortifications into the open country he finds himself in a new field of interest. To begin with, there is a study in peasant proprietorship ready to his eye. Scores of acres around Antwerp, as around so many continental cities, are market cropped, and nearly every acre has its owner. Are they prosperous, these thousands of small landed proprietors? Monarchs of all they survey, must it be said of them, as of the monarch race in general, "uneasy lies the head which wears a crown?" These are fateful questions, for on the answers to them hangs the issue of our own problem of rural industry. I gladly escape the responsibility of treading dangerously on political ground by disclaiming ability, in the short time I had for study, to give an adequate reply. But certain points infallibly come home to the observer.

To begin with, it is food for speculation whether Belgian cottage homes are the more comfortable, cheerful, and cleanly from the fact that all the family seem to spend the day in the fields. With Hop gardens around my own door, I am aware that women and child labour is drawn upon, especially in harvest time. Indeed, women and child pickers are more expert than men. But our Kentish folk manage to get a very fair living without the necessity for the lady of the house to wield a digging fork and her eldest daughter to carry the manure. A typical family scene in Belgium comes before my eyes. The head is digging, his wife is digging. A sturdy son, age about seventeen, wields a Potato planter; a girl a year or two younger is pulling some dark, rank-looking manure into shreds and putting it in the holes. A juvenile a stage younger is dropping the Potatoes; he looks moderately cheerful, but has tender reminiscences of marbles. A younger scion still is kicking soil over the sets. If he were mine I should speedily kick him, but he is in the rear, and is left to pursue his own peculiar method of covering undisturbed. Naturally, a breadth is soon planted, and I hope the returns are enough to give the busy family plenty of good food and clothing through the winter, which must press hardly on them. If it does not, with all this family labour, then is peasant proprietorship more beautiful in the theory than the practice.

The workers are pretty thorough in their manipulation of the soil. Some of them at least are believers in spring trenching. Most of the cultivation is with hand tools, and the land is worked two spits deep. Moreover, it is heavily fed. An astonishing quantity of both solid and liquid manure is applied, the Belgians being apparently of opinion that they can make better use of their sewage than to pollute rivers with it. No doubt they receive much sympathy in Great Britain regarding this singular delusion. Not from every Briton, though. To individualise, not from Mr. H. J. Jones. The Chrysanthemum King (which is the genial one's Belgian title) boarded my train at Ghent, and fell to telling me of his misguided faith in what other people cheerfully throw away. Every time his eye (which is rather a wideawake one too) fell on people ladling mysterious liquids out of tubs, he irradiated things with an approving smile. What that smile is I need not say. But its effect on the different family parties was marked. Even the boy who wanted to be at marbles felt it, and lost his gloom.—W. PEA.

(To be continued.)



WEATHER IN LONDON.—A portion of the shortage of rain, of which so much has been said of late, must have been made up during the past few days. On Thursday, Friday, and Saturday of last week there were occasional heavy showers, with gleams of sunshine and high wind on the latter day. On Sunday we had a downpour throughout the day, which cannot but have done good. Monday was bright and warm until the afternoon, when a light shower fell. Tuesday was a genial day, while at the time of going to press on Wednesday it was warm, and a slight drizzle was falling.

— WEATHER IN THE NORTH.—A great deal of rain has fallen during the past week, the nights of the 28th and the 30th ult. being especially wet, and on but few days was there much sunshine, while cold E. winds have made the evenings occasionally chilly. May opened with a lovely day, but the afternoon became dull and colder. There was again heavy rain on Monday night, and Tuesday morning was drizzly with coldish wind from the east. Heavy floods are reported from the eastern counties.—B. D., S. Perthshire.

— ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, May 10th, in the Drill Hall, James Street, Westminster, 1 to 5 P.M. At three o'clock the Rev. Prof. G. Henslow, M.A., V.M.H., will lecture on "Some of the Plants Exhibited." The schedule of the show of British Grown Fruit, to be held at the Crystal Palace on Sept. 29th, 30th, October 1st, is now ready, and can be obtained on application to the Secretary, R.H.S., 117, Victoria Street, S.W.

— ROYAL HORTICULTURAL SOCIETY.—SCIENTIFIC COMMITTEE.—April 26th. Present: Dr. M. T. Masters (in the chair); Prof. Müller, Rev. W. Wilks, and the Rev. Prof. Henslow, Hon. Sec. *Vine Leaves with Gummy Exudation*.—Some leaves were received from Mr. F. M. Gulrin, Iscoed, remarkable for a stickiness. This appeared to be attributable to green fly, although none was present. The exudation is the result of puncture. *Pæonies, Decayed*.—Mr. F. F. Freeman sent some leaves which appeared to have decayed at the junction with the stem. They were forwarded to Mr. W. G. Smith for examination for the presence of fungi. *Ribes coccinea, Growth of*.—Mr. Henslow described a rather curious case of a bush growing by the south side of some palings. It had sent up a number of shoots on the north side. The former half were in full leaf bearing very few racemes; while that on the other side was covered with flowers, the foliage being scarcely apparent.

— PRUNUS NANA.—A bed of this species in flower near the temperate house at Kew comes in for a good share of well-deserved admiration by all who see it. In general appearance the leaves and flowers resemble those of the Peach or Almond to a certain degree, though smaller. It is of dwarf habit, old plants not being more than 3½ feet high. The flowers are three-quarters of an inch across, bright pink, and produced from almost every bud on last year's wood. For a bed on the outskirts of a lawn, as at Kew, or other prominent position this species has several recommendations, being of neat habit as well as a good flowerer. For forcing during early spring for the greenhouse it is also an excellent plant. Cuttings do not root readily, but by layering a plant or two a stock can soon be secured.—W. D.

— GOOD EARLY CABBAGES.—When looking at some superb Gloxinias which Mr. Young, gardener to Mrs. Pearson, Kingston Hill, has in one of his small houses, he said, "Before you go, come and see my Cabbages." Well, it did seem to be a big drop from Gloxinias to such humble vegetables, but I could not otherwise than admire the true inwardness of the gardener who was equally enthusiastic over Cabbages and flowers. I went to the kitchen garden, and saw his Flower of Spring, Ellam's Early, and Maincrop. The breadth was indeed a capital one, and I observed that although all had been sown and planted at the same time, Flower of Spring was earliest. Mr. Young said that some of his fellow gardeners were surprised to find he has been cutting such good heads for some time. That is doubtless because they still stick to old late large varieties. The wonder now is that anyone should grow them. Once it was thought good to have Cabbages turning-in at Whitsuntide; now we expect to have them in abundance at Easter.—WANDERER.

— **DEATH OF MR. A. W. BLICK.**—We learn with regret of the death of Mr. A. W. Blick, who will be remembered as taking a keen interest in horticultural matters, and who was for about twenty-five years intimately connected with the Royal Horticultural Society. The deceased passed away at Brentford on Monday, May 2nd, at the ripe age of seventy-one years.

— **PELARGONIUMS FOR WINTER FLOWERING.**—Valuable as are Zonal Pelargoniums for winter flowering, it is comparatively seldom that one sees a really first-class collection. This is regrettable, and we trust that Mr. C. H. Parker's endeavour to popularise them will be well rewarded. On page 390 we give in abridged form a paper read by Mr. Parker, who is an ardent amateur horticulturist, at a recent meeting of the Barnsley Paxton Society, and we commend the information therein to the notice of our readers.

— **STEEPING SEEDS IN WATER.**—Some persons soak Kidney Bean, Beet, and other seeds in water previous to sowing, but the practice is not to be recommended, especially at this early period, when the ground is not yet thoroughly warmed. There is usually enough moisture in the soil for the needs of the seeds, though it may not be very apparent. The moisture required is mainly absorbed in the form of watery vapour, and the warmth of the sun acting upon the surface soil will cause sufficient for the demands of the seeds.—E. D. S.

— **PRIMROSES CHANGING COLOUR.**—Can anyone tell me the reason of the common Primrose changing colour. I planted three years ago a clump of wild Primroses taken from a wood. The first year they came yellow, the second year there were two or three blossoms among the yellow ones of a dark colour. This year they have come all dark, and with only two or three of the original yellow colour in the centre of the clump. The foliage remains green, as when in the wood or when first planted. There are no coloured Primroses in the garden.—H. S.

— **A STUDY IN CUCUMBERS.**—It is a matter of education as well as of interest to walk through the Cucumber houses at Rowledge when Mr. Mortimer has his trials on, and is also growing large stocks for seed production. We then have such an admirable opportunity to become familiar with the character of the fruits of most of the leading varieties in cultivation. Thus there is the now well known Lockie's Perfection, but which under careful yearly selection has there grown from 12 to some 16 inches, and is a first-rate stock. Telegraph Improved, or otherwise, is yet an excellent variety as a cropper, but it wants deeper colour, and to be rid of the long heel or handle which characterises it. Rochford's Market, now the best spine Cucumber in cultivation, is readily recognised, and so, too, are Sutton's Progress, Success, A1, and others. In spite of the existence of the greatly improved varieties named, some houses still cling to old ones, and I learned that Cuthell's Black Spine was in particular request. Some new varieties are being grown also, as with all the advance made the ideal market Cucumber does not seem to have been obtained. So far Telegraph and Rochford's hold the field.—A. D.

— **THE POPULARITY OF THE DAFFODIL.**—The notes on "Daffodil Land," page 353, remind one that what the pioneers in the culture of the nodding flower have commenced, general lovers of the family are carrying on with vigour. Perhaps no flower has increased more rapidly in popularity, and among enthusiastic amateurs there appears to be a general desire to become possessors of the novelties as they come out. Probably this accounts for the fancy prices which "Daff" quotes in his notes. Things were different a few years ago when, with the exception of several enthusiasts, the only Daffodils found in private gardens were the Lent Lilies, and later on the Poet's Narciss. Lately it has been my privilege to visit gardens of no great pretensions, and in several of them I have been struck with the varied and interesting collections of this popular flower. One amateur has instituted a Daffodil show in his not very large garden. Last season the first exhibition was held, which he assured me was a great success. This gentleman sends out invitations to his friends and acquaintances when the flowers are at their best, and in return asks for a subscription, which is duly handed over to a local charity. The show does more than help a deserving institution, it encourages the further growth of the flower, for many who see the superb little collection are so charmed with its interesting beauty that they become Daffodil growers themselves. The result is that the flower is grown in many more gardens in the neighbourhood. Working men have also caught the fever, and nowadays it is no uncommon thing to see Sir Watkin, Empress, Golden Spur, and other such favourites nodding their heads in the little front gardens of the artizan class.—G.

— **APRIL WEATHER AT DRIFFIELD.**—Mean temperature at 9 A.M. (corrected), 46.80°. Wet bulb, 44.22°. Mean maximum, 52.68°; mean minimum, 37.54°. Highest, 66.5° on the 8th; lowest, 27.2° on the 1st. Mean of maxima and minima, 45.11°. Mean radiation temperature on the grass, 33.54°; lowest, 22.0° on the 1st. Rainfall, 3.655 inches. Number of rainy days, fourteen; greatest amount on one day, 1.170 on the 11th.—W. E. LOVEL, *Observer, York Road, Driffield.*

— **SUSSEX RAINFALL.**—The total rainfall at Stonehurst, Ardingly, for April was 1.09 inch, being 0.66 below the average. The heaviest fall was 0.23 inch on the 14th. Rain fell on ten days. The maximum temperature was 65° on the 8th; the minimum, 32° on the 5th. Mean maximum, 58.20°; mean minimum, 39.15°; mean temperature, 48.67°, which is 1.31° above the average. The month has been dry, with a good deal of sunshine, and cold northern winds. There has been no frost to hurt fruit bloom, which is very promising. Some welcome showers have fallen since the 26th.—R. I.

— **APRIL WEATHER AT DOWLAIS.**—The total rainfall here for the past month was 3.62 inches, which fell on thirteen days, the greatest fall being 0.65 on the 11th. Average maximum temperature, 58.5°; highest reading, 75° on the 25th; mean minimum, 32.5°; lowest reading, 20° on the 4th; below freezing point on nine days. There were seven sunless days. The wind was in the W. and S.W. on eighteen days, and in the E. and S.E. on ten days. Very stormy, with strong winds in the second week. The last two days were very rough and wet, the wind at times blowing quite a gale.—WM. MABBOTT.

— **THE WEATHER LAST MONTH.**—The wind was in a southerly direction twenty-one days. Total rainfall, 1.89 inch, which fell on thirteen days, and is 0.09 inch above the average for the month; the greatest daily fall was 0.38 inch on the 11th. Barometer (corrected and reduced).—Highest reading, 30.248 inches on the 21st at 9 A.M.; lowest, 29.393 inches on the 11th at 9 P.M. Thermometers.—Highest in the shade, 66° on the 8th; lowest, 23° on the 5th; mean of daily maxima, 54.76°; mean of daily minima, 37.60°. Mean temperature of the month, 46.18°; lowest on the grass, 17° on the 5th; highest in the sun, 128° on the 29th. Mean temperature of the earth at 3 feet, 45°. Total sunshine 161 hours 45 minutes. There were two sunless days.—W. H. DIVERS, *Belvoir Castle Gardens, Grantham.*

— **POTATOES FOR IRISH PEASANTS.**—A daily contemporary states that the Local Government Board has addressed a letter to the Guardians of several Unions in the west of Ireland, saying that representations having been made to the effect that many persons employed on the relief works have been unable to avail themselves of the Seed Supply Act this year owing to poverty and the high price of seed, the Government will give a bonus in the shape of a free grant of Potato sets to families whose members, resident on the holdings, were employed on the relief works on or before April 6th. The entire cost of the grant will be borne by the Government, and is to be regarded as an additional recompense for the labour given. All the Unions to which the letter has been addressed have accepted the offer.

— **KEW GARDENS.**—In the course of the discussion in the House of Commons on the vote to complete the sum of £115,000 for the maintenance of the Royal Parks and Pleasure Grounds, Mr. Akers-Douglas said with reference to his decision to open the Gardens at an earlier hour in June next, and the two following months, there never had been a difference of opinion as to opening the Gardens at an earlier hour subject to two conditions—that the Gardens would be taken advantage of by the public; and, secondly, that it would be safe in the interests of science and the students at Kew to grant an extension. It had at length been decided to open on June 1st at 10 A.M., and to open them at that hour every morning for the following three months. If it were found that the public appreciated the new arrangement, and visited the Gardens to the extent that the advocates of the earlier opening of the Gardens said they would, the Office of Works would make the extension of hours—as far as the summer months went—permanent. The Queen's Cottage would be handed over by the Lord Chamberlain's Department to the Office of Works on June 1st, and, as soon after as the Office of Works could make the necessary arrangements, the grounds would be open to the public. It was the intention to preserve the grounds as far as possible in their present condition. They would only open a path from Kew Gardens to the cottage. The rest would remain much in its present condition. It would not be cut up unnecessarily, and it should still form one of the most beautiful bits of wild country in the proximity of London, and be, as it certainly had been, a sanctuary of all bird life in the district.

— **A GENEROUS GIFT.**—A botanic garden is likely to be founded at Aberdeen, for we learn from a correspondent that Miss Cruikshank, sister of the late Dr. Cruikshank, has offered £15,000 to the Aberdeen University for the provision of such a garden in memory of her brother.

— **NARCISSUS AT THE DRILL HALL.**—When making our report of the Daffodils at the Drill Hall, on the 26th ult., we particularly noted the superb collection from the Chilwell Nurseries of Messrs. J. R. Pearson and Sons. Not only were the varieties numerous, but the quality was excellent throughout. By an oversight we omitted to record the fact that a silver Flora medal was given to this exhibit, and we may add that the award was thoroughly deserved.

— **FIRE AT MESSRS. WATKINS & SIMPSON'S.**—At a few minutes after midnight on Thursday a fire broke out in Exeter Street, Strand, which at one time threatened to involve the whole block of buildings between St. Michael's Church, Burleigh Street, and Covent Garden Market. The fire originated in the premises tenanted by Messrs. Watkins & Simpson, in Exeter Street, who carry on a business in seeds and bulbs, the upper part of the premises being used as a storehouse. The fire was noticed by a workman employed at Covent Garden Market, who was passing by at the time, and he immediately gave information to the policeman at Burleigh Street. A fire escape was immediately brought on the scene, and in the meantime news of the outbreak had been telephoned to the various fire stations in the vicinity. In less than five minutes an engine arrived from Whitefriars Street, and quickly got a hydrant to work from Burleigh Street. By a quarter past twelve five steamers and eight branches of hose were sending volumes of water on to the building. By this time the premises were enveloped in a mass of smoke and flame. Shortly afterwards the building of the Ballantyne Press caught fire, but the flames were immediately suppressed. At five minutes to one the fire was got under, but not before three floors of the seed warehouse had been burnt out. During the whole time engines continued to arrive, and altogether over a dozen were on the scene. The building destroyed was one of four storeys with a frontage of about 35 feet. The cause of the outbreak is at present unknown. Arrangements have been made to cause as little interruption to business as possible.—("Westminster Gazette.")

— **CABBAGES SEVEN FEET HIGH.**—A case, Howcroft & Watkins v. Laycock, was tried by Judge Lumley Smith, Q.C., in the Westminster County Court, on Monday, 25th ult., and was a claim by a Covent Garden seed firm against the Rev. G. T. Laycock, of Petersfield, Hants, for £24 1s. 6d. for seeds supplied. The claim was admitted, and there was a counter claim for £18 damages for breach of contract. The case for Mr. Laycock on the counter-claim was that amongst the seeds was a packet of seeds for which 2s. 6d. was charged. He ordered Couve Tronchuda. He had the ground manured, the seedlings transplanted, and they should have grown to about 18 inches high, but they grew on and on until they became 7 feet high. (Laughter). His Honour: A Cabbage 7 feet high? Defendant: Yes; I have 20,000 of these worthless plants. His Honour: Twenty thousand gigantic Cabbages. What are they like? Defendant produced two about 8 feet high. Each of the stumps was about 2 inches in diameter, and was surmounted by a tuft of leaves, and about twenty clusters of yellow blossoms. His Honour: Are you sure they will not grow any higher? Defendant: I have let them go on with the hope of their turning into something useful. (Laughter). Defendant stood the plants by his side, and they stood about 2 feet higher than himself, the flowers hanging down resembling Laburnum. He considered he had sustained £40 damages. Cross-examined as to plaintiffs' "non-guarantee clause" on their invoices and catalogues, defendant said he sent eggs of fancy poultry all over the world, and was of opinion that he had to supply what was ordered, and no clause would exonerate him. For the sake of his reputation he should always take care that customers eventually got what they ordered. Mr. Barron, late of the Royal Horticultural Gardens, Chiswick, said the plants produced were Jersey or cow Cabbages. The stalks were sometimes made into walking sticks. Mr. Eck, plaintiffs' counsel, said it was a Marrow Kale, and, had it been cut five or six months earlier, would have been as palatable as that ordered. His Honour found that the plant ordered was a Cabbage fit for people to eat. The plants produced were not, and though he fixed the damages at £21, plaintiffs were protected by the non-guarantee clause, and there would be judgment for them. Notice of appeal was given by Mr. Laycock. [While seedsmen are justified in protecting themselves against the consequences of failures which may be the result of errors by purchasers or cultivators, the question to be settled is, "How far a vendor's non-guarantee clause shall operate?" This is obviously a matter of far-reaching importance.]

— **CUTTING IVY.**—The present time is one of the best periods for cutting back Ivy on walls and buildings. The bareness resulting from severe cutting-in will not last long, inasmuch as new growth must shortly start, and luxuriant foliage beautify the position.—S.

— **BLACKS IN TOMATOES.**—It is not a very far transition from blacks in Potatoes to blacks in Tomatoes. From my own experience, and that of a neighbouring gardener who grows Tomatoes remarkably well, I am firmly convinced that this spot is first caused by the sun coming on the moist fruit early in the morning before sufficient air is admitted.—N. N.

— **STEAM LAWN MOWERS.**—Will any correspondent using these kindly give their experience as to their capability of working on steep gradients and among trees and shrubs where there is very sharp turning about? We have several acres of such lawn, and at present employ five small 12-inch machines. We have horse machines, but cannot use them, as there is no room to turn, and the ground being mostly on the slope makes it worse. Any answer will be esteemed by—EROMEGNAR.

— **DAHLIAS.**—As so many fine exhibition flowers have been during the past few years produced on what was but a piece of barren hungry heath at Farnham, no one who has poor soil need be discouraged when embarking in Dahlia culture for show. Occasional trenching and liberal manuring help wonderfully to bring even a very poor soil into fine condition. It is that treatment which enables this Farnham heathland to produce first-class show Dahlia blooms. Just now holes are being prepared over nearly an acre of land, each 4 feet apart. Some short manure and old pot soil is added in each case, then when refilled a stout stake is driven into the centre, against which about the end of May the plants are put out. So great is the development of the Cactus section, and so great the variety, for all the best have to be grown, these seem to rival all other sections in area requirements.—D.

— **A MUSHROOM MARTYR.**—A producer of light reading in the "Morning Leader," under the floricultural heading of "Sub Rosa," thus delivered himself the other day:—"I once tried a little gardening—only a little, and only once. I saw a beautiful picture of some Mushrooms in a seed catalogue, and the explanation of how to grow them was so clear and simple that I set to work; and it was work too. First of all I had to make a bed, and though I forget how I did it, I distinctly remember that I felt inclined to lie on it. Some may think I am lying on or about it now—but I'm not. I don't forget, however, that I had to spank the stuff firm with the back of a beastly great spade. I pounded away until at last I broke the spade, and nearly broke my back. I called that spade a spade, and more also; and as to my back, when I tried to stand up I appreciated the truth of Dudley Warner's remark, that the first requisite for gardening is a cast-iron back with a hinge in it. Nothing resulted, though I had obeyed all the instructions of that deceptive handbook till six months or so, when one Mushroom with a blighted appearance struggled through, and I believe it was a toadstool." It seems almost a pity he did not sit on it, for settling its identity: he could but have fallen off. Then he would have had to admit "lying" by its side.

— **EARLY TULIPS AT LONG DITTON.**—What singularly grand coloured masses do these present just now in Messrs. Barr & Sons' grounds when seen from the adjoining railway. Seeing them so distant recently, I was anxious to see them closer, and went over for that purpose on the last day of April—rather a wild stormy day certainly, but in spite of the storms the Tulip flowers were all open, and presenting colouration that can be only fitly described as gorgeous. What a relief to turn from the big masses of the pallid Daffodils to the brilliant and varied hues of the Tulips! How pure and beautiful the whites, of which the old Pottebakker is yet the finest. Then the best yellows seemed to be Ophir d'Or and Chrysolora. Thomas Moore is a perfect Tulip of a rich orange buff colour. Next in hue is Duchesse de Parme, orange red edged yellow, and more effective still is the good old Keizers Kroon, deep red edged yellow. There are lovely rosy tints in Rose Superb, rosy cerise; W. E. Gladstone (new) salmon red self, a perfect flower; another, deeper in hue, is Proserpine, rich ruddy cerise—one of the best. Intense reddish or scarlet crimsons are Crimson King, a very striking bold flower; Joost Van Vondel, brilliant crimson, slightly veined white; Artus, rich crimson scarlet; and Couleur Cardinal, rather late, deep bronzy crimson, and a beautiful variety. Very deep, and a striking form, is Wouverbans, colour rich rosy violet. There are others of this dark hue, but one variety seems sufficient. For those who like delicate tinted flowers none is more charming than Rose Gris de lin and Rosa Mundi, both rose pink. These make a first-class selection. The grand collection of late border Tulips at Long Ditton will be at their best about the middle of May.—WANDERER.



LÆLIO-CATTLEYA THORNTONI.

BIGENERIC hybrids amongst Orchids are now numerous, but the interest in them shows no signs of decrease. On the contrary; when one such as L.-C. Thornton is exhibited it is certain to have a large concourse of admirers. As may be seen from the illustration (fig. 74) the flower bears a general resemblance in form to L.-C. Digbyana-Trianæ, which we figured on September 9th of last year; but at the same time the two are quite distinct. The one now under notice resulted from a cross between L. Digbyana and Cattleya Gaskelliana. The sepals and petals are a soft rosy lilac, and the latter are sharply serrated. The superb lip in which the Lælia parentage is so apparent has a central colour of yellow, paling to white. The broad front lobe is handsomely fringed, and of a rose pink colour. The Orchid Committee of the Royal Horticultural Society awarded Messrs. J. Veitch and Sons, Ltd., who staged the plant, a first-class certificate on April 26th.

ANGULOAS.

THESE are an interesting section of Orchid, very distinct botanically, their nearest affinity being Stanhopeas. The foliage is handsome on well-grown plants, being broad and deep green, springing from dark green bulbs of different size according to the species. The lip presents rather a peculiar structure, being very loosely hinged with the column, and rocking to and fro upon the flower being moved. The plant likes a fairly substantial compost, consisting of equal parts of peat fibre, loam, and chopped sphagnum moss.

The best season for repotting is usually immediately after the flowers are past, but in the case of plants that miss flowering it may be done at rather an earlier stage in the plant's growth—i.e., when considerable progress has been made with the growth, but the roots have not started. It is easy to see whether or not the plants are going to flower in the early stages of growth, as the flowering shoots commence to swell unduly when an inch or two in length, showing the presence of the flower spikes. The practice often followed is to repot after the manner that Calanthes are treated—viz., just as the young growth starts, and in this there is some advantage, though personally I prefer the later season.

I have several reasons for this, the chief being that the young roots will have new sweet material to run in, while when the plants are repotted earlier it becomes more or less saturated with moisture. The strain of flowering, too, is more severely felt by the plants when the roots have just been disturbed. Those who practise potting earlier may say that the young roots are disturbed by the operation, but if carefully done this will be but slight, and is, I think, more than outweighed by the advantages described.

As to manner of potting, it would be well if cultivators would remember that Anguloas have very persistent roots that live more than one season, and for this reason they will not stand being pulled about and shaken completely out, as Calanthes and Thunias are treated. By all means let everything of a sour or close character—or anything that is likely to soon become so—be taken out; but be careful in doing this that the living roots are not disturbed more than is absolutely unpreventable, for much injury is done thereby. It leads to shrivelled pseudo-bulbs and a weakened condition of the plants generally, while it is one of the most important points in their culture that the pseudo-bulbs be strong and stout.

The plants need not be elevated much above the rims of the pots, in fact for healthy well established specimens they are better kept a little below, but badly rooted weak plants may be kept up a trifle with advantage. Drain the pots thoroughly, and if these are of medium size in comparison with that of the plants they will be all the better, as it will not be necessary to disturb the plants again for a couple of seasons. After repotting keep the plants a little on the dry side until the roots are again active, and maintain a moist atmosphere by frequent damping about the stages, pots, and floors.

When rooting freely again keep them moist until the young pseudo-bulbs are finished, when, if the weather is warm, and no frosts

occur at night, they may be stood outside in a partially shaded position for a time. But be very careful that they are screened from direct sunlight, or the foliage will be burnt, and will fall prematurely. It may be noted that the individual plants differ considerably in the time they carry their foliage. Some are quite deciduous, while others will have the older leaves on well into the new year. As a rule the evergreen plants do not flower so freely as those that lose their foliage during the winter.

Scab is often troublesome, but this and red spider are easily kept under if taken in time. The Anguloas are not a large genus, and though many more occur in some lists, there are only about three distinct species. But these vary a good deal, both in size and colour. In A. Clowesi the blossoms are in the type about a couple of inches across, Tulip shaped, or nearly round, and of a clear soft yellow in colour. There is a large flowering variety, A. C. macrantha, also pure white and beautiful form named eburnea, which is often described as a species. It is very rare.

A. Ruckeri is another very variable kind, with large reddish brown flowers, the inner side of the segments yellow, spotted with red. It is a native of Columbia, and was introduced early in the forties, along with the foregoing. One of the finest Anguloas in existence is A. R. sanguinea, a deep blood-red form of the type, while of this, too, there is an albino. A. uniflora is the oldest species known, having been discovered over a hundred years ago in Peru by the founders of the genus, Ruiz and Pavon. It has pretty white flowers, more or less tinged with rosy pink, this colour being the most freely disposed on the petals of the variety Turneri.—H. R. R.

ZONAL PELARGONIUMS FOR WINTER.

IN support of the winter culture of this plant I have this encouraging statement to make at the outset, I do not know a single flower that will continue blooming for three consecutive months in the dark, dreary days of winter, and yield a greater quantity and variety of beautiful flowers at a less cost.

The best and cheapest house is the ordinary span-roofed propagating house running east and west, with abundance of ventilation at the top, a centre path with stages 2 feet 6 inches from the floor and 4½ inches below the wall plate, so that the plants can be as near the glass as possible. Heating is of vital importance, as damp, moist, or cold air will at once cause disaster. In addition to the ordinary 4-inch pipes have a 2-inch pipe about 12 inches above the wall plate. If the stage is made 7 inches deep the plants can be plunged in ashes, while the structure will answer admirably for growing a crop of Tomatoes or Cucumbers in summer time.

PROPAGATION.

The best cuttings are those taken from the half-ripened side shoots from 3 inches to 4 inches long; they are all the better if they have not been allowed to bloom. It is a mistake to attempt to build up a strong healthy plant from a weak, sickly, or sappy cutting. It is a matter of choice whether the cuttings are rooted outside the first week in August or inside during the first week in March; the advantage gained, if autumn rooted, being a larger plant. I, however, prefer spring propagation, as the stock never escapes supervision until the plant is thoroughly developed and ready for outside treatment.

The cuttings should be inserted in earthenware pans, providing good drainage, and shading for a day or two. Keep the leaves moist, but do not wet the soil. When roots have been emitted pot the young plants in large 60's and grow in a temperature of 55° to 60°, using the syringe freely, and gradually giving more air up to the final potting stage. As soon as the plants begin to grow freely pinch into shape and remove all flower buds as soon as they appear.

POTTING AND FEEDING.

Great care must be taken not to damage the new feeding roots when potting, which must be done firmly. The last week in May place the plants in 5-inch pots, using charcoal for crocks. The best manure is made from cow manure and leaf mould in equal parts, using a sprinkling of soot the last time the compost is turned. When ready for use it ought to be in such a condition as will rub through a five-eighth-inch riddle. Make up a compost with one part rich fibrous loam, using as much coarse river sand as will keep it open, and the other part of the above-named manure. Incorporate thoroughly, and let it stand for a few days before using. After the final potting place the plants in a close frame for a fortnight before turning out into the open.

Liquid manures should only be applied when the plants are thoroughly root-bound, and the flower buds forming. I have had very successful results from the following mixture:—Steep 1 bushel of rock culms in 12 gallons of cow urine, mix, and stand for a week; add 6 gallons of soot water and 1 lb. of gypsum, stir well together, and use 1 pint to a gallon of soft water. The gypsum is used as a preservative, and to counteract the caustic effects of the urine; the soot as a general fertiliser; and the rock

culms for the potash. If kept covered up in a tub this liquid will keep good for six months. Chinchas guano in itself makes capital liquid manure. A good liquid manure can be made by dissolving half an ounce of saltpetre and half ounce of phosphate of potash in a gallon of soft water.

OUTSIDE TREATMENT.

Select an airy position fully exposed to the sun, but sheltered from rough winds, and plunge the pots in ashes. Give plenty of room for the sun and air to circulate about the plants, and sprinkle every morning between eight and nine, except in wet weather. The object of this outside treatment is to obtain short, sturdy, well ripened growth, with a correspondingly strong healthy root action, and all the moisture the plants require is sufficient to keep the fibrous feeding roots steadily growing.

BLOOMING PERIOD.

The blooming period is regulated according to the stopping of the bud. D sbud to the first week in October for flowering at Christmas. The plants must have as much light and as dry air as possible, with a minimum temperature of 50° for the singles and 55° for the double and Ivy-leaved varieties. Give the plants liquid manure in proportion to the quantity of bloom they have to support. If flowers are to be packed and sent away it is advisable to drop a small particle of gum into the eye of each one. Never allow a truss to remain on the plant after the centre has fallen.

SELECTION OF VARIETIES.

With such a large number of varieties of almost equal merit, it would be somewhat presumptuous if I attempted to name the best for this

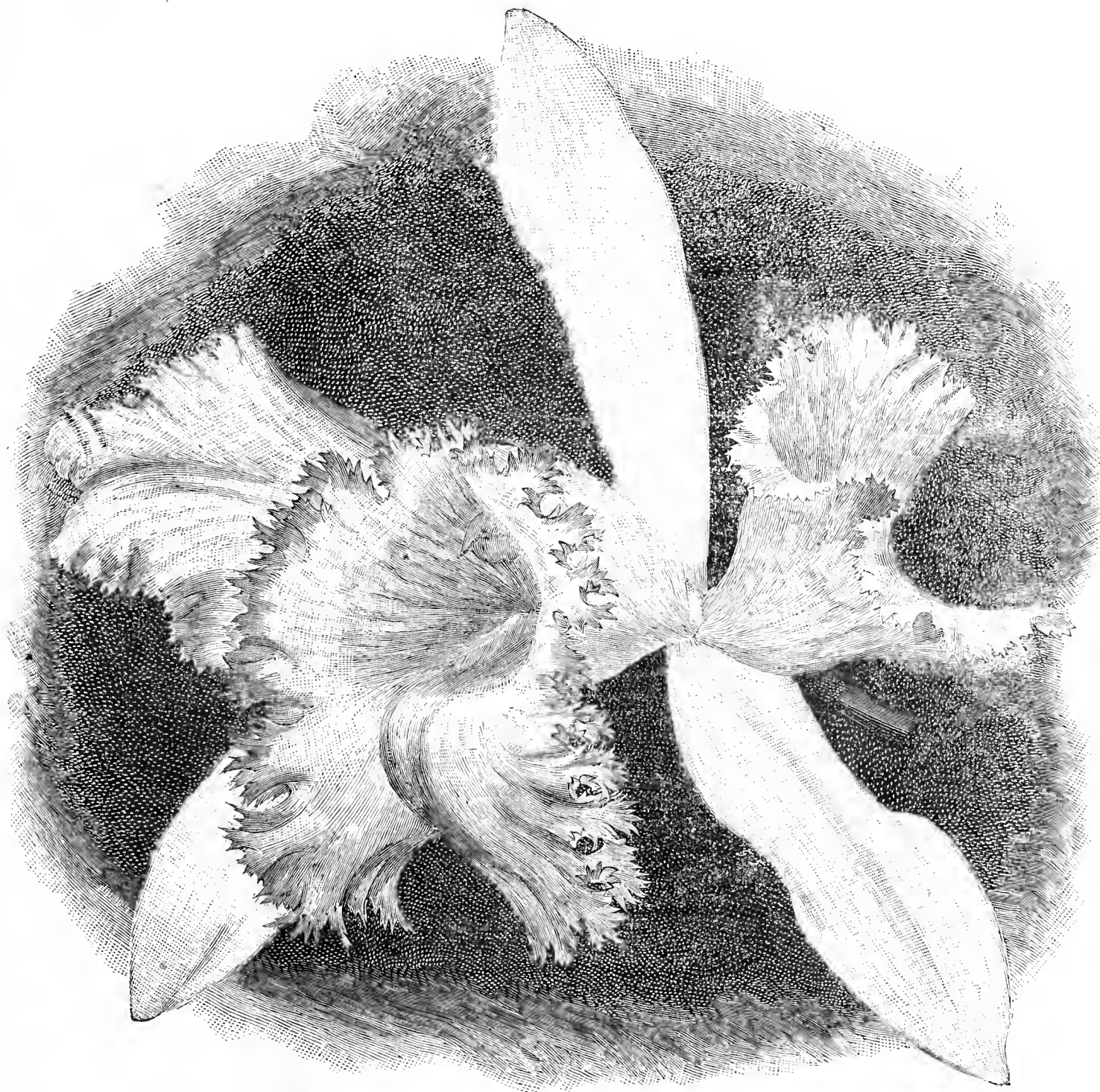


FIG. 74.—LELIO-CATTELEYA THORNTONI.

If early bloom is required allow all flower buds to remain after the end of August. Examine the plants frequently for caterpillars, and as soon as the flower buds are formed the plants may be allowed their first dose of liquid manure. On the approach of frost the plants should be housed. Give as much space as possible between the plants, for it must not be forgotten that beside the charming flowers there is that fine zonal marked foliage, which is so pleasing and so worthy of development.

INSECT PESTS.

The Zonal Pelargonium in a healthy state is practically free from insects. Its chief enemy is the caterpillar, which, being of the same colour as the foliage, requires careful watching during the autumn months. They should be picked off by hand as soon as they appear. Canker is the result of propagating from a bad cutting, or from some unsuitable potting compost. If the foliage changes colour, or black or yellow spots appear, turn the plant out and examine the roots and drainage, replacing in a clean dry pot. The chances are the plant has been waterlogged, and if the roots are not healthy cut back the plant.

purpose. My advice to those who are making up a collection is to visit the plants at some good nursery, instead of trusting to a catalogue description. For the benefit of those who are unable to do this, I have taken the opinions of two of the best raisers we have in this country—viz., Messrs. H. Cannell & Sons, Swanley, Kent, and Messrs. J. R. Pearson and Sons, Chilwell; these two authorities agree that the following are the best in commerce for winter culture:—Souvenir de W. B. Miller, King of Crimsons, Lord Aberdeen, Rev. Brett, Countess of Buckingham, lilacina, Niagara, Snowdrop, Mrs. Pole Routh, Mrs. Hall, Duchess of Marlborough, and delicata. These are single varieties. Of double I recommend Raspail Improved and Hermine, which is white. The best sent out in 1897 (Messrs. Pearson's selection) are Mrs. W. Partridge, Sir H. Irving, Sir J. Kitson, Crabbe, Dryden, Chaucer, Southey, A. Tennyson, and Herrick. The best single Zonal I know for growing all the year round is Cannell's Favourite. The single Zonal which has given me the most satisfaction for winter blooming is Wm. Jacoby, a deep crimson, which will be found classed as a Hybrid Nosegay. Do not forget that good old Zonals are like good old songs, and when you have proved them, stick to them.—C. HY. PARKER.

COLEUS.

DURING the bright days of summer, when the air is warm, the brilliant light shows up the lovely colour shadings of these popular plants to advantage. It has often struck me how different are the appearances of plants when seen under varying conditions of light and shadow. Look at the leaves of a well-coloured Coleus on a dull day; they are even then bright and attractive. But to see their charms displayed to the best advantage bright sunshine is necessary; then the colours appear to be wonderfully intensified, and to sparkle with life and vividness. As decorative plants Coleus are of great value. True they do not last long in rooms, except in the lightest position; but then they are easily and quickly grown, and moreover supply such novel colouring, that they may be regarded as indispensable plants in the majority of gardens.

Various methods of propagation may be adopted with equal success. When close frames in a propagating pit are at disposal cuttings root quickly if plunged in bottom heat, or when inserted in pots or boxes placed on the hot-water pipes of a Cucumber or Melon house root quite as certainly if the soil is kept moist, and when placed in full sunshine on shelves near the glass in a warm moist house roots are quickly emitted, and the young plants kept remarkably sturdy till ready for potting off. This ought to be done as soon as the plants are well rooted. A compost consisting of two parts loam to one of leaf soil, with a little sharp sand added, is one that suits young plants well.

During the summer time I always water the plants thoroughly as soon as potted, and then allow the soil to get fairly dry before water is again applied. After potting the plants should, if possible, be placed on a shelf near the glass, and be stopped as soon as they begin to grow freely, then by the time they are ready for potting they invariably want more head room, and can be placed on a stage in a light position. Those plants intended for decorative purposes should be potted into 5, 6, or 7-inch pots, according to their size, at this stage using a much richer compost; one formed of equal parts loam and hotbed or well decayed manure answers splendidly, as the Coleus is a gross feeder, and will thrive amazingly in a soil far too rich for the majority of plants—in fact, they will grow and colour wonderfully well on a manure heap placed in a warm house.

Plants stopped in a young state as previously directed will send out numbers of young shoots; these, if staked out, or tied to a wire placed under the rim of the pot will form the foundation of a shapely plant. Those in 5-inch pots will require no other stopping, but those potted into 7-inch ones will require the points of the side shoots to be removed once. The above remarks in regard to stopping and tying are applicable to the formation of bush plants, which are generally the most popular. If a few pyramidal-shaped ones are required the plants should be allowed to grow freely without stopping for a time, and be given plenty of room to promote the production of strong side shoots. If the main growth is trained to a straight stake some varieties will branch naturally, and the main shoot will not require stopping until the required height is reached.

I have, however, found it difficult to get some varieties to branch freely without stopping the central shoot; in such cases I pinch when the plant has reached the height of 9 inches, and train up the stronger of the two terminal shoots produced, the other being removed. When large plants are wanted for exhibition purposes, the training in the early stages is exactly the same as that already described, and during subsequent stages, stopping and tying are regularly performed as growth takes place, the former being done for the last time three weeks before the plants are wanted to be at their best, the last tying being performed a fortnight later. For the final potting the soil must be used in a rough state, but should consist of the same ingredients as those recommended for plants in 5 and 6-inch pots. Throughout the period of growth Coleus ought to be given plenty of heat and moisture, and be kept near the glass, no shade being given except when grown in very light houses. Many cultivators object to syringing Coleus, but I consider it decidedly beneficial to do so in bright weather, and I practise what I preach.

To get highly coloured leaves the soil must be packed with roots, the plants well exposed to light, and weak liquid manure be applied two or three times weekly. Before the plants are used either for decoration or exhibition purposes they may be gradually hardened by a freer circulation of air. The following varieties are some of the best in cultivation:—Petit Robert, Countess of Dudley, Beckwith's Gem, Vesuvius, Faith, Elegans, Hermit, Dr. Jackson, Cloth of Gold, Hart's Conqueror, and Arthur Whitley.—PLANTSMAN.

SOWING ASTERS OUTDOORS.—Aster seed sown now in a warm position outdoors will germinate freely. Select a well-prepared friable piece of ground, and draw drills an inch deep and 10 inches apart. Sow the seed thinly and cover with fine soil. Thin out as the plants touch each other, leaving them finally 6 inches asunder, or more if necessary.—E. D. S.



DURATION OF ROSE SHOWS.

I OBSERVE in the list of Rose shows in your issue of April 28th, that at Southampton and Hanley the exhibitions last two days! and at York, Wolverhampton, and Newcastle, they are of three days duration!!

Advancing age is frequently attended with failing memory, so possibly I am incorrect in thinking that many years ago it was resolved by the N.R.S. that Rose shows of more than one day duration should not be recognised, and that on this occasion all the members of the N.R.S. swore by their (Rose) gods that they would abjure two-days shows. May I ask whether this resolution (if there ever were such a resolution) has been rescinded, and, if so, when?

It has never been my misfortune to witness a two-days Rose show, and I trust that I shall never be guilty of a crime of sufficient enormity to condemn me to such a sight. But I have been under the impression that Rose exhibitions were intended by N.R.S. to encourage the cultivation of the queen of flowers in its greatest beauty. I read yesterday that the hippopotamus is extinct, but I presume that there still exists some rosarian who thinks that the taste for a Rose "in its most perfect stage of possible beauty" is enhanced by a two-days Rose show.—HENRY B. BIRON.

SOME OF THE NEWER ROSES.

ALTHOUGH raisers of Roses in France and Germany still continue to pour in a quantity of new varieties, they neither excite the interest that they used formerly to do, nor do they add very much of value to those which we have already had. It was different in former days, when there was always an anxiety to know what Lacharme, or Guillot, or Eugène Verdier and others had to offer us, and we were pretty sure to obtain amongst the mass of indifferent flowers one or two prizes. But now-a-days we miss the names of some of our oldest raisers, and the present generation does not seem to be so successful as that which preceded it.

There are one or two things which strike one in looking at the last list of novelties. We miss in the first place the large number of Hybrid Perpetuals we used to obtain. In the list for last autumn there are only six of these. Then, again, we find a very large number of Teas, and a considerable quantity of Hybrid Teas. Of the latter it is impossible to say until we have an opportunity of seeing them whether they are really Hybrid Teas, or are so like either the H.P.'s or Teas that they should be classed among them. Messrs. Paul & Son say very truly in their catalogue that in some of these the Hybrid Perpetual strain is so marked that they ought to be included in that class; while, again, there are others in which the Tea percentage is so strong, as in Kaiserin Augusta Victoria, that they might very well be included in the Tea class.

Another point is that so many of the British-raised Roses are now included in their catalogues. I notice one curious error in Guillot's new catalogue—viz., in ascribing Muriel Grahame to Dingie & Conard, the American raisers, thus depriving our old friend Mr. Brown of Reigate of the honour of obtaining it, and Messrs. Dickson & Sons of sending it out. The altered circumstances with regard to the French Roses have been accentuated by the considerable number that we now have of home-raised flowers. These are from time to time exhibited, and rosarians have the opportunity of seeing them at our exhibitions, and so being able to judge of their value, or otherwise, without trusting to the magniloquent descriptions which the foreign raisers attach to their novelties.

In looking through the list of novelties of the last few years, it is a very remarkable fact that not one Hybrid Perpetual of foreign origin has been of sufficient value to be placed in our catalogue; thus, in the supplement of the National Rose Society, published in 1896, there is not one H.P. of foreign origin. Comtesse de Ludre is indeed there, but then it was a Rose raised in 1880, and owes its introduction in the list to one very fine bloom shown at the Crystal Palace Exhibition; it is, however, I believe a very uncertain Rose, and I do not think it will be found in many stands. Duc d'Orleans, a Rose of 1889, also raised by Eugène Verdier, has found a place there, but it is not a very well-known Rose, though some growers speak highly of it. It is, in truth, amongst the Teas and Hybrid Teas that the French growers try to keep up their reputation. For instance, there is that grand Rose Mamah Cochet, sent out in 1893 by Cochet, which has established for itself a high position. It is of a deep flesh colour, with rose tints in the outer petals, and sometimes they are edged with bright rose, which make it very attractive. There is now announced a white Maman Cochet: should it be really white, and of the form and substance of the type, it will be grand acquisition to our white Teas.

Amongst our home-raised Teas Sylphe (W. Paul & Son), which was sent out in 1895, is unquestionably a fine flower. It is an ivory white tinted with peach colour, with a creamy pink centre; the petals are very deep and stiff; the habit is vigorous, and very free-flowering. Of Muriel Grahame it is hardly necessary to say anything. It is a distinct sport of Catherine Mermet, and resembles that flower in everything but colour. Doubts have been expressed in some quarters as to the vigour

of its growth. So many good growers have, however, expressed their high opinion of it in this respect that I think we may hope that it will prove as vigorous as the variety from which it sported. Mr. Piper of Uckfield seems to have found Catherine Mermet sporting in the same way in his nursery; and this has occurred with other Roses, notably with Souvenir de S. A. Prince. Corinna is another of Messrs. W. Paul and Son's acquisitions to which I think justice has hardly been done; but I do not fancy anyone will regret having it in his collection. The colour is flesh, shaded with a deeper pink, the shape being semi-globular with a pointed centre.—D., Deal.

(To be continued.)

NOTES ON ALPINE FLOWERS.

(Continued from page 328.)

PRIMULA SPECIES.

By this conventional name are designated various members of the genus *Primula*, which have not come under recognition as florists' flowers. Some are true species or their varieties; others are natural or garden hybrids. Nearly all are of much beauty, and have received not undeserved attention from many growers of alpine flowers. At this time it may be opportune to say a little about some of these flowers, with a view to bringing them under the notice of those interested in the plants which form the general subject of these notes.

PRIMULA DENTICULATA.

This is one of the best known of the *Primula* species, although less common in many gardens than its variety or sub-species *P. cashmeriana*. It is, perhaps, less variable in its colouring if raised from seed than the latter, but this is not to be regretted, as the Toothed Primrose has flowers of a more refined colouring than are those of the Cashmere variety. It was introduced from the Himalayas, and has been figured several times. It is difficult to render in words the soft yet bright colouring of *P. denticulata*. It is called "bright lilac," and as one cannot suggest a more exact description that must stand for the present. The flowers are about half an inch across, and are closely arranged in a round head or umbel. It grows from 6 to 12 inches high.

It is recommended that it should be grown in leaf mould, and in a moist position. The writer has been experimenting with this *Primula*, and finds that it produces finer flowers if grown in a well-drained soil, which is dry during the winter months, but is kept moist in spring and summer. *P. d. pulcherrima* has taller stems, larger heads, and brighter flowers. *P. d. cashmeriana* has the under surface of the leaves densely covered with a gold dust-like meal. There are also white varieties of both. *P. denticulata* and its varieties can be increased by division or seeds. It comes into bloom early in the year if the weather is mild.

PRIMULA PALINURI.

The Palinuri Primrose comes from Southern Italy, but is quite hardy on well drained rockwork. It is of very different habit and colour from the preceding species, having bright yellow flowers arranged in a drooping umbel. It comes into flower in April and May, and its pretty bright flowers, with a perfume like that of the Cowslip, and its bright, pale green, toothed leaves of large size, make it a very attractive plant. The flower scape is covered with white powder. It may be increased by division or seeds. A compost of sandy peat is suitable for this Primrose if in a half-shady situation, with a moderate supply of moisture in summer.

PRIMULA INVOLUCRATA.

This *Primula* from the North of India is a general favourite, although there are many more brilliant flowers in the genus. Its beauty consists more in the quiet, yet pleasing colour of its creamy-white flowers, with their yellow eye, than in the more gorgeous hues of some species which attract the attention at once. The leaves are a pretty green, and the whole plant only grows 6 or 8 inches high. It is with us a bog plant, or at least one which requires to be grown in sandy peat always kept moist. It is increased by seed or division, and, like many of the genus, requires occasional top-dressing when it raises itself above the soil. The roots are sometimes disturbed by frost, and it is well to look the plants over occasionally to see if they need top-dressing or pressing down.

PRIMULA MINIMA.

This miniature growing plant, known as the Fairy Primrose, is rather a difficult plant to grow. In this respect it compares unfavourably with some of the hybrids of which it is one of the parents. A good treatment is to plant in well-drained fissures in rockwork in rich loam and grit, and never to allow it to become dry in spring, summer, or autumn. It is, perhaps, the smallest of the species, but its flowers are very large in proportion, being sometimes an inch in diameter. They vary from pink to violet, and are sometimes almost white. The leaves, toothed at the top, are about half an inch across. The stock may be increased by careful division.

PRIMULA STEINI.

This is a bright and attractive *Primula*, which is very well worth growing, and gives a good effect to the portion of the rock garden in which it grows. It is said to be a hybrid of *P. minima* and *P. hirsuta*. It is not difficult to grow wedged between two stones on moist, half-shaded, and well-drained rockwork. The flowers are bright purple, and are produced on very short stalks. The leaves are what are known as

spathulate-obovate, and are toothed. This *Primula* is very pleasing in every way, and the habit is so dwarf and compact as to make it suitable for positions where larger plants would be out of place. It may be increased by division.—ALPINUS.

(To be continued.)

GOLDEN PRIMROSE JOHN WILKINSON.

I AM sending for your inspection and opinion a yellow Primrose. In the summer of 1896 a small plant of it was given to me by the raiser, the wife of a gardener in our neighbourhood. From that one plant I have now in front of my window nineteen plants in glorious bloom. From the plants sent you will be able to judge of the habit, colour, and form of the flowers. It is a very free and most profuse bloomer; during the whole of last winter it was never without flowers. For a yellow bed in spring I have not seen anything to equal it; not only is the deep yellow colour so telling, but the form of pip and truss gives it such a pleasing and charming appearance.—N. N.

[Two plants were received from our correspondent, and one of these we sent to Mr. S. Arnott, who thus writes:—"The plant sent for inspection is a fine yellow Polyanthus of bold and sturdy habit, and with large trusses of handsome deep yellow flowers. It should be very effective as a spring bedder or planted with other flowers. If, as you say, it is a good winter bloomer, its value is much increased, and the variety should be largely propagated. Deep yellow Polyanthus of similar shades are much appreciated, and yours is much darker and brighter than the majority. The flowers are well formed, but pin-eyed (which, however, is of no consequence for decorative purposes), and borne well above the foliage on remarkably sturdy stems. We have recently seen a strain of exceptional merit, which contains a few flowers of nearly equal merit. These were the result of many years' selection." We have also seen effective forms of yellow bedding Polyanthus, but did not observe at the recent show of the National Auricula and Primula Society one in all respects so good in its way as the golden yellow John Wilkinson.]

A FRENCH SEWAGE FARM.

A LARGE sewage farm has been laid out at Achères for purifying the Paris sewage before allowing it to pass into the river Seine. The inhabitants of Paris number upwards of 2,500,000, and the total flow of sewage is stated to average 17,660,000 cubic feet per diem. This is collected in great intercepting sewers, which convey it by gravitation down to Clichy, where it is raised 118 feet by powerful pumps, and distributed by gravitation through the farm. The pumping engines at present installed are capable of indicating 1200 horse power in the aggregate, but future additions will raise this to 6000. It is stated that experience shows that 1 acre of suitable soil can take 1580 cubic feet of sewage daily, so that an area of about 11,120 acres would be needed to deal with the whole of the discharge of the Paris sewers. A very high degree of purification is reached, the effluent proving to contain fewer bacteria per cubic centimetre than most uncontaminated streams. The land also has been greatly increased in value, being now worth five times as much as it was before being made the receptacle for the sewage. As a natural consequence, says a contemporary, neighbouring landowners, who originally had fiercely opposed the establishment of a sewage farm in their midst, are now claiming to have the sewage supplied to their own properties. The farm at Achères is 2471 acres in extent, and is under the control of M. Bona, a civil engineer, who in the main raises Beetroot, though this crop will admit of much less sewage being passed on to the land than certain others. The main conveying the sewage from the pumping station is 43.2 inches in diameter, whilst a secondary system of pipes, ranging from 31 inches to 16 inches in diameter, serve as feeders to the irrigation trenches, into which the sewage passes through 11½-inch valves. The ground is laid out, and the irrigation trenches are so arranged that the only service needed in regulating the flow is the opening or closing of the regulating valves just mentioned. The crop which can stand the most sewage is grass, a meadow being, it is stated, uninjured by a flow of 2,430,000 cubic feet per acre per year: Lucerne can take 1,790,000 cubic feet per annum; Artichokes, 593,000 cubic feet per annum; flowers, Parsley, and Sorrel, 536,000 cubic feet; Leeks, Cabbages, and Celery, 325,000 cubic feet per annum; whilst Beetroots, Carrots, and Beans will take only 197,000, and Potatoes, Asparagus, and Peas but 141,000 cubic feet per acre per year.

CINERARIAS.—In addition to growing one or two of the best of our English strains of Cinerarias, I have also taken care to include the red, white, and blue strains sent out by Vilmorin & Co., which are really admirable. Of late years much improvement has been manifested in the dwarf habit of the plants, and the freer blooming and finer form of flower, and their earliness in flowering. Purchased separately one never gets mixed, every plant coming true. The red is a fine bright shade, the white too is excellent, but in the blue every conceivable shade can be noted. The two former are large flowering, and the latter small, compact, and a gem for cutting, for supplying a colour for conservatory decoration that we too often lack. To those who cannot accommodate the three varieties, I would advise the latter as a thorough acquisition, certain of being admired.—R. P. R.

FERN NOTES.

AT all seasons of the year we admire the grace and elegance of our hardy and exotic Ferns. There are very few gardens in which they do not find a place, and where their culture is not attempted with more or less success. Year by year they are increasingly cultivated, and, as a consequence, continued efforts are made to obtain new species and new forms to supply the demand. Some exceedingly handsome species have been introduced within the last few years, and many elegant and handsome forms of the old species have been selected.

Perhaps the most graceful, or at least the most useful, of all Ferns is *Adiantum cuneatum*. It is very easily cultivated, the mature fronds keep well after they are cut, and there is none more useful for buttonhole flowers, bouquets, or to mix with cut flowers for any decorative purposes—indeed, seldom is any other species used for the best bouquets in Covent Garden; but the mature fronds ought only to be used, as young foliage very quickly shrivels. The true British Maidenhair is much like *A. cuneatum*, but it has larger pinnules, and does not grow so freely; it requires similar treatment to *A. cuneatum* when under cultivation, and is most at home in a cool stove. Several distinct forms of this have been raised. *A. capillus-Veneris* admirabile has fronds more wavy and graceful than the original. *A. capillus-Veneris* daphnites is a more dwarf form of the species, and the fronds have larger pinnules. *A. capillus-Veneris* magnificum and undulatum are also very desirable, and should be in all large collections.

Of exotic species of *Adiantum* some have the young fronds tinged of a deep red colour. A small-growing very neat species is *A. tinctum*, but it is not of free growth. *A. Veitchianum* has fronds of the deepest red, and is very free. *Adiantum asarifolium* is a very novel species with simple orbicular fronds, when full grown about 3 inches across. It should be grown for its distinct character. *A. concinnum latum* is a charming form of the species; the fronds are more erect in growth. *A. farleyense* is the most magnificent of all, but as it does not produce fertile fronds it can only be increased by division. It is not so easily grown as most of the other species, and requires rather different treatment. Most of the *Adiantums* thrive with a fair supply of air, and should get a little sunshine; while *A. farleyense* is much affected by draughts, and the fragile delicate pinnules are injured by sunshine.

The potting materials for *Adiantums* should be about equal parts of tough fibrous peat and turfy loam; a little silver sand and a few pieces of charcoal ought to be added to keep the whole porous. The repotting of Ferns should be done with care; if the ball has become matted with roots prick amongst them with a pointed stick until they are loosened out, but do not break the ball of earth. Some of the old spent mould may be removed from the surface. The pots to be used must be clean, and they should be one or two sizes larger, according to the vigour and species to be potted. One large potsherd should be placed at the bottom of the pot, and the smaller pieces, which should be quite free from dirt, placed over it in a careful manner. The compost should be packed round the ball rather firmly, but not quite so firmly as is done with hardwooded stove or greenhouse plants. Do not water the plants immediately after they are repotted. Experienced cultivators of pot plants do not require to be told about it; but I have seen expensive plants taken to the potting shed, shifted into another pot, and watered on the hand-barrow before being removed to the stove or greenhouse, which is barbarous treatment, and highly injurious to delicate plants. Frequently I do not water plants for a week or ten days after they are repotted (when the operation is performed early in the season), and by that time fresh rootlets are formed and ready to take up the water when it reaches them. The same treatment applies to all classes of pot plants.

The *Davallia* is a useful genus of Ferns, and nearly all of them are adapted for small houses. *D. Mooreana* is a noble and very handsome species. Its broad arching fronds are between 2 and 3 feet in length. It is a stove Fern, having been introduced to this country from Borneo. *D. parvula* is one of the smallest of the species; the fronds are only a few inches high, but are finely divided and very neat. *D. Tyermani* is very distinct, and similar in size to the last. It is well adapted for basket-work, and was introduced from the west coast of Africa.

The Gold and Silver *Gymnogrammas* should be grown in all plant stoves, but they ought to be placed in a part of the house where they are out of the reach of the syringe, as sprinkling sadly disfigures them. *G. Laucheana* makes a neat medium-sized specimen, and the gold powder underneath the fronds is of the deepest yellow. *G. chrysophylla* is also a very desirable species, slightly powdered on the upper surface and golden yellow underneath. Of the silvery species, *G. tartarea* and *G. argyrophylla peruviana* are good. A very elegant species named *G. decomposita*, the fronds of which are finely divided, has a very graceful appearance.

The *Lomarias* are an easily cultivated class, and some of the species are very pretty. *Lomaria gibba* is very easily produced from spores, and in a small state it is very pretty as a table plant. *L. gibba crispa* is a small-growing form, which is also very pretty in small plants, but it does not make a handsome specimen. *L. gibba Belli* is well deserving of notice, as it makes a handsome specimen, and very seldom produces fertile fronds. The fronds are similar to those of the species, except that the ends are singularly tasselled.

It would occupy too much space to describe half what ought to be grown in collections. A few more remarks on culture may be added. Except Maidenhairs, already mentioned, most stove Ferns thrive in turfy peat, with a very little loam added to it, and when the pots are well filled with roots a good supply of water is required. Too much water before the pots are tolerably well filled with roots, and overpotting, will cause

the soil in the pots to become sour, after which the plant will not thrive. During winter a high night temperature is not desirable, 55° will be quite sufficient; nor should they be syringed at this season, although the atmosphere must be pretty well charged with moisture derived from water scattered about the floors and stages. If the weather is fine the plants may be syringed during the spring and summer, except the *Gymnogrammas*, which are disfigured by the syringe being used upon them; and as young fronds will now freely be produced by increased warmth, the house will be required to be shaded during hot weather. Ventilation requires, perhaps, more attention during this than any other month of the year. Unless great care be taken vegetation suffers from the drying winds which we have, often accompanied by frost. Admit very little air at such a time, as it will be better to shade to keep down the temperature.

Ferns are subject to the attacks of various insect enemies. Where mealy bug is plentiful it gets upon the fronds of some of the species, and can seldom be dislodged without injury to the plant. Others are attacked by thrips, while green fly will also attack the young fronds of *Lomarias* and check their growth. These must be destroyed promptly.—GROWER.

BALDRY'S SCARLET DEFIANCE RHUBARB.

THE note of "N. N." on this Rhubarb (page 376), your editorial comment, with its complimentary finale, and the arrival here of a box of stalks from "N. N." have made it necessary that I should say a few words on the subject. First, however, let me thank you for putting "N. N." in communication with myself, and then thank him for his kindness in sending some of his Rhubarb to me for comparison, and still more for the very friendly letter which accompanied it. It was a true brother gardener's epistle, and it is needless to say, I hope, that I replied to it with becoming friendliness.

Now for a word on Baldry's Scarlet Defiance Rhubarb, and its comparative state of unknownness—if I may coin a word to express its small area of cultivation. My great experiments were made in the late seventies and early eighties, and I have to fall back on my memory, which, as we old people know, is not so alert or retentive as it was in the first four decades of life. This Rhubarb, Baldry's Scarlet Defiance, Salts' Crimson Perfection, Reading Ruby, and one or two others, were dropped out of the competition, I know, because they proved "too slow," or, in other words, they did not satisfy the requirements as to earliness, productiveness, colour, and flavour.

Those four points were the criteria of judgment, and, though each variety might have some one point or more excellent, as Baldry's for colour and flavour for instance, the other points were not fulfilled in some way or other. Time is the great factor in life generally, and time, or earliness, is an important desideratum in a small-growing Rhubarb in a private establishment, and small-growing Rhubarbs are of no use in market gardens, unless they are exceptionally early. Our friend "N. N." seems to have a very good healthy form of Baldry's Scarlet Defiance, and, another important matter, his soil and climate appear to suit it. The stalks sent, on being cooked, were in every way excellent—composition, colour, and flavour; colour and flavour being particularly good.

The reason why it is not catalogued by traders may be inferred from the reasons I have now given. As far as my memory serves me it was catalogued about the time I was in the thick of my experiments, but it has fallen out lately. By the kindness of "N. N.," who offers me roots, I hope to renew acquaintance with it, and, on trial, if all goes well with us, I may have something to say at a future day.

I have reduced my varieties to the following on the common sense principle that every gardener acts upon, to grow only the best of everything that fulfils the requirements of the establishment which he serves:—

1, Chiswick Early Red, which, after all is said, is the very earliest to come naturally in the open ground. It, however, is very closely run by (2) Hawkes' Champagne, which is my mainstay. Here, however, I may give a very curious instance of a sort of race between this and Chiswick Early Red. They grow almost side by side, and under the same conditions, or nearly so, and in some years they are so close together in coming in that I have pulled them on the same date, but as a rule Early Red has the first honours as to earliness. 3, Lister's Cherry Red, once sent out by Messrs. Fisher & Holmes of Sheffield as *Prima Donna*. This is a little later than Hawkes', but is as red, and has a more refined and more delicate flavour. When the cook wants anything special as to refinement in Rhubarb, then Lister's is pulled for the purpose. 4, Salts' Crimson Perfection.—This is grown only in small quantity, and that to satisfy a certain lady, who admires its colour; and then 5, and last, Victoria, grown almost on purpose for forcing in the Mushroom house and for the making of jam.

All of the Linnæus breed of Rhubarb I have let go, though I kept Johnstone's St. Martin for a long time. It was such a good summer sort, but its lack of colour was against it. The giant sorts, as Stott's Monarch, are of no use in a gentleman's garden; they are too large and coarse, and lack colour. When I was working my Rhubarbs, Messrs. Stuart & Mein of Kelso told me that they had a variety coming on which was a cross between Stott's Monarch and Victoria, with the size of the first variety and the colour of the latter, but I have not heard anything more about it; otherwise, with size and colour, it would do for market work, and perhaps to grow for forcing in private gardens.

I think I have indulged myself enough now, but have much enjoyed the reopening of what has been, and is, to me a very interesting subject, and my thanks are due all round, but especially to the Editor and to "N. N."—N. H. POWNALL, *Lenton Hall Gardens, Nottingham*.

FRITILLARIA TULIPIFOLIA.

AMONGST the many species and varieties of Fritillarias there are some flowers of the quaintest beauty, and many of the comparatively unknown species are worthy of more attention. A collection would lend interest to many gardens, and yet it is very seldom that one meets with them, except perhaps such as *F. meleagris* and *F. imperialis*. These ought of course to be grown, but others should be added. The culture and propagation are not difficult, and plants may be grown in borders or in cold frames if desired, but they do not, as a rule, thrive so well in pots as when planted out. *F. tulipifolia*, about which "F. L. O." asks, is a dwarf Caucasian species, remarkable chiefly for the peculiar glaucous blue colour of its flowers externally; internally they are brownish red. It is a variable species as regards size. This species was introduced into this country in 1872, and is portrayed in the woodcut, fig. 75.

THE NATIONAL AURICULA SOCIETY'S
SOUTHERN SHOW.

No grower of Auriculas could have anticipated a good exhibition this year; in fact, it has been one of the most extraordinary and disappointing seasons that has ever been experienced. One of our largest southern growers wrote in the somewhat following terms to me in February:—"What a pity it is that the R.H.S. has fixed so late a date as April 27th for the show. The southern growers will be quite out of the running, as all our flowers will be over; it will, however, give the northerners a chance." I met him, however, on April the 12th, when he said to me, "Although I have got nearly 800 flowering plants, I have not more than two dozen in flower," and those of course were mostly selfs, which are always earlier than the edged varieties, and this was universally the case, the north and south telling the same story; and though the flowers did push very vigorously earlier in the season, the cold and harsh easterly winds in March and the early part of April completely stopped their growth.

This state of things had not only the effect of preventing the plants from being in flower in good time, but also of hindering the character of the bloom, for I think most florists must have noticed that when a flower is long on the way it is never of good quality. One was therefore not surprised to find large empty spaces on the tables, and that the quality of the flowers was very much below the average; and so far was it from being a time for the northerners, they were conspicuous by their absence, and an Auricula show without the Rev. F. D. Horner was like the play of Hamlet with Hamlet left out. Nor was good old Ben Simonite able to put in an appearance. A message came from Mr. Horner that he had nothing in flower, and hence one item which always gives an interest to these exhibitions was absent—viz., the bringing forward of seedlings which mostly come to us from the north. Another matter which bears out my view of the exhibition was the paucity of some of our best flowers; thus I did not see a single specimen of Prince of Greens, and George Lightbody, which so often has taken nearly all the prizes in the single grey edged flowers, was very sparingly represented, and this year it was not exhibited in this class. It is, generally speaking, a late flower, which would in some measure account for it. Many of the flowers exhibited also evidenced that they had been subjected to severe pressure, and the Auricula ever resents the idea of heat, as a very eminent grower expressed to me. If you force the same plant two years successively you must injure it, even if you do not kill it; nor do I think the flowers are nearly so refined when they are subjected to it.

Of seedlings there were comparatively few, and no edged variety seems to have claimed any distinction. A fine self exhibited by Mr. Phillips, named Mrs. Dranfield, received the first prize. It was a rich deep, purplish blue with a good paste and stout stem, and is likely to prove a valuable show variety.

It must not be supposed, however, that there were not many good flowers to be seen. Mr. Douglas's stand of twelve was unquestionably the best in the show. Especially fine was Olympus; while his George Lightbody, though perhaps not equal to blooms which he has before exhibited, well maintained the character of that grand flower. Mrs. Henwood certainly now stands at the head of the green-edged varieties. Mr. Douglas's truss of it was very fine, and so also was Mr. C. Phillip's, shown in the class for six; it is, I believe, a northern flower, and seems to be of a good constitution. Abbé Liszt, raised by Mr. Douglas, is another flower which has made a great advance in the same class of green edges, and it obtained the honour of the premier Auricula in the exhibition. Amongst other noticeable flowers there were good blooms of that fine white-edged variety John Simonite, which is well known as a very difficult one to manage, but it is certainly one of the purest white edges that we have. It was also noticeable how again the late Mr. Woodhead's seedling Auriculas were at the front: thus in the four prizes obtained for the best grey-edged variety three of them were secured by George Rudd and Rachel, two of his seedlings, and the same flowers appeared in several of the winning stands, as also did the two others, Mrs. Dodwell and Black Bess, and when we remember that only these four were ever sent out by him, it is surely a great distinction to have been the raiser of such flowers. As I have never been a grower of Alpines or Fancy varieties I do not feel that I have any right to say anything about them, though I believe the Alpines were especially fine, and although

there were only two exhibits of Fancy Auriculas they were very much admired.

It is very pleasing to notice new exhibitors coming forward, for we have to remember the Auricula is never likely to be a very popular flower. One very able horticulturist, who has made his mark in other flowers, said to me on Tuesday, speaking of the exhibition at the Drill Hall, "It would be a very nice one if it were not for the Auriculas," and when I remonstrated with him, and asked why he uttered such a heresy, he replied, "Oh, they are so stiff and formal, and the colours are so decided, and don't blend into one another;" and I am afraid this is a very general opinion concerning them, and yet there is no flower which so retains the affection of those who have cultivated them for any lengthened period; and when I remember how low the culture of them had fallen in the neighbourhood of the Metropolis, I see how very much has been done during the past



FIG. 75.—FRITILLARIA TULIPIFOLIA.

few years. The present position of the Society is largely due to the zeal, intelligence, and tact of its excellent Secretary, Mr. Henwood, and much sympathy was expressed for him, in that when he had reached a very topmost place amongst exhibitors in the South, he was obliged to abandon the culture of his favourites owing to ill-health.

Of course my opinions about the show may be challenged, and others may form a different estimate of it, but it must be remembered that I am a florist of the old school, brought up in the strictest sect of Auricula growers, to whom coarseness was ever an abomination, and who holds to the rules laid down both as to flowers and plants maintained by that school of Lancashire florists who made the Auricula what it is; and I hope that this idea of its true character may be upheld by those who have now entered the ranks of Auricula growers—D., Deal.

TRADE CATALOGUES RECEIVED.

W. Clibran & Son, Altrincham.—*Garden and Conservatory Plants.*
J. Laing & Sons, Forest Hill.—*Hardy Perennials.*
C. Turner, Slough.—*General Plants.*

GARDEN TEACHING IN STAFFORDSHIRE.

IN connection with the important question of keeping the rural population on the land, providing them with remunerative employment, and enabling them to make the most of a limited income, the Staffordshire County Council some three years ago started ten experimental schools, following much the same lines as had been adopted in Surrey, but providing a more complete equipment. At each centre twelve plots are provided, which are of equal size, and each plot is worked by one pupil. The County Council provides the seeds and manure, and lends at each centre a toolhouse, a wheelbarrow, and the necessary tools for twelve pupils. The pupils pay a small fee, which is usually about a shilling, for the session: this fee is intended to cover the rent of the plots, and usually, as a reasonable rent is charged by the local landowner, this amount is sufficient to cover the expense. The produce of each plot belongs to the pupil, and in several cases last year, in addition to what the pupil used off his plot, money was realised from the sale of the produce of one plot which would have been sufficient to defray the rent of the whole of the plots at the centre.

During the present summer there will be twenty-five centres, and instruction will be provided for 300 pupils. The teachers are not unfrequently the rural schoolmasters, who are selected partly from the fact that they have shown their practical skill by the way in which their own gardens have been cultivated, and partly from their possession of the certificate of the Royal Horticultural Society, the double qualification being insisted upon. In other cases the head gardeners of noblemen or gentlemen in the localities have been allowed to act as teachers, Lord Harrowby's gardener being in charge of the school at Sandon, and Lord Hatherton's gardener of that at Penkridge.

For the coming session it has been decided to provide an additional plot at each centre for the cultivation of small fruit. This plot will be under the direct management and control of the teacher, and contain six Gooseberry bushes, six Currant bushes (including Black, Red, and White), a row of Raspberry canes, and two rows of Strawberries, while space will be left for propagation. The plants have been selected by Mr. Cock, the County Instructor in Horticulture, and supplied by Messrs. Dicksons of Chester. It will not be possible to do very much until the plants have made some growth, but in future regular instruction will be given on the cultivating, pruning, and propagating of small fruit bushes, and it is hoped that the result will be not only to encourage the growth of small fruit throughout the county, but to introduce to the notice of cottagers a number of improved varieties of Gooseberry and Currant trees, and also of the best kinds of Raspberries and Strawberries, as the pupils will be able to propagate these for themselves, and thus to introduce them into their own gardens.

Village Gardening Schools and Their Cost.—Schools are intended specially for the young labourer or under gardener. Exceptionally a pupil will develop marked skill or aptitude such as would mark him out for the position of head gardener or for the business of a market gardener. In such cases a thorough course of instruction, extending over at least two years, is desirable. This higher form of teaching is provided at colleges. In Staffordshire a scholarship of £50 per annum is offered each year to enable promising pupils to proceed to a horticultural college, and to remain there for two or three years. In various other counties similar horticultural scholarships are also awarded. The labourer's son in even a remote village is thus able to start with instruction provided at his own door, and to pass on to the best gardening colleges in the country.

In Staffordshire the payments to the teachers and the equipment of the schools is conducted on a liberal scale, and everything supplied is of the best quality. The Committee insists upon at least forty school lessons being given, each of at least two hours' duration, and the teacher's remuneration is calculated on the basis of 2s. 6d. per hour. The initial cost at a new centre for the provision of toolhouse, tools, wheelbarrow, and for the preliminary rough digging and manuring, varies from £12 to £15, while the subsequent cost averages about £12 per centre, or £1 per pupil per annum. This cost, however, does not include the proportion of time devoted by the county horticultural lecturer, or to organisation and visits of inspection.

It is thought that by training the young man to intelligently understand the reason for the operations he performs, to cause him to read and to think, and thus to enable him ultimately to make two blades of grass grow where one grew before, our rural population can be maintained, and the migration of all that is best from the country to the large centres of population prevented.

THE YOUNG GARDENERS' DOMAIN.

A PILL FOR A GRUMBLER.

MANY probationers who take interest in the "Domain" must have had a grin over the remarks of "Grumbler" on page 356. He writes with all the confidence of a sage, and if he had not stated that he was a foreman one might have pictured him as a self-satisfied old fogie, and a famous hand with the spade. There are two sides to every question. I write as a foreman who has had experience with young gardeners, some who paid premiums and some who did not; and though here and there one meets with a black sheep, as in all other capacities, our young men as a body are, in my opinion, as able, energetic, industrious, and intelligent as the probationers in any other occupation. Since the "Domain" has been opened I have noticed the improvements made by some of those who take advantage of it, and would remind "Grumbler" that nothing succeeds like success. We never know what we can do till we try, and

it is an easy thing for one to resign himself to the happy fate that he has not the necessary ability before he makes an effort. Many of the best writers of the day remember a time when as beginners they tried over and over again before success crowned their efforts.—ANOTHER FOREMAN.

[Very true; and this particular foreman has had, and now enjoys, a better reward for his perseverance than he at one time anticipated.]

TYING VINE SHOOTS.

THE excellent advice by "Vitis" on this subject (page 348) is worthy of attention from all cultivators of the Vine. The perusal of the notes reminded me of an instance which fully corroborate the remarks there made.

A few years ago, when occupying a general foreman's place in the Midlands, we had a midseason vinery containing several varieties generally known as possessing greater "snapping" proclivities than others. The Vines in question manifested signs of an exceedingly promising nature. I was instructed to tie down the young growths, but foreseeing the inevitable disastrous results, I suggested it would be better to bring them down gradually. Anxious to meet the wishes of my chief, and at the same time to see creditable and satisfactory results, I pursued the latter course, merely keeping the ends from the glass.

But the gardener declared his intention of tying them down himself. The result was not noticeable till the following morning, when a sad spectacle was witnessed. Fully a score of the best shoots had snapped at the heel. After continued experiments and observation I find the most liable to snap are Black Alicante, Muscat of Alexandria, and Gros Colman. I must differ slightly from "Vitis," for in my opinion Black Hamburgh is one of the best for tying. In fact, I have repeatedly tied whole houses of them without a failure.

Great care should be taken not to place the tie too high, or the shoots will snap beyond the bunch. Bring the matting in a slanting direction, and if the wires run horizontally slip the tie along the wire until able to give the final one. Attend to this every alternate morning, and patience and perseverance will yield satisfactory results.—VINIFERA.

WINTER FLOWERING ROSES—FORTUNE'S YELLOW.

THE delicate Rose bud is always appreciated, but never so much as in the winter and early spring months, and those anxious to obtain them from December onwards may achieve wonderful results if a start is made at once. It is necessary at the outset to consider which are the most suitable varieties, and how to grow them in quantity. Failure in growing a bountiful supply often results from no other cause than growing a large number of varieties, the majority of which prove next to useless for the purpose. It is much better to abandon the idea of having a large number for the mere sake of having them.

There are many beautiful Roses recommended for winter flowering, but I think there is none that can surpass the old variety, Fortune's Yellow. Though despised by many who are only acquainted with it grown outside, with proper treatment under glass it produces an endless number of delicate orange coloured blooms, which are a source of delight to all beholders.

If anyone has a suitable span-roofed house in which to grow Tea Roses (planted out), this old variety cannot be too highly recommended, and no grower should be without it. Many others bloom abundantly as the season advances, but Fortune's Yellow flowers as freely in January as in April. It is also a remarkably good Rose for cutting, as the buds, if cut before they are fully expanded, open freely in water, which is not the case with many other sorts during the winter months. It has been grown in these gardens for several years with remarkable success. After being planted in a good stiff compost it is trained over the roof of the house; when it has ceased flowering it is rested for a short time, and then pruned back to about a couple of eyes, from which it grows most vigorously.

The only pest that ever attacks it is green fly, which is hardly allowed to show itself before it is eradicated by fumigation. Climbing Devonensis, Maréchal Niel, Gloire de Dijon, and Reine Marie Henriette are also excellently grown, but none can be compared to Fortune's Yellow, as its splendid foliage adds greatly to its beauty.—S. S., Lockinge.

PERSIAN CYCLAMENS.

THIS is one of our best greenhouse flowering plants, and as such is worthy of careful attention, and it is hoped these few notes may be of service to young gardeners and readers of the "Domain." Early in August clean, shallow pans should be prepared, first, by being well drained and then filled with a compost comprised of fine loam, leaf mould, and sand. The seeds should be sown thinly, merely covering them being all that is required in this respect. Place the pans in a shallow frame, having an equable temperature of 60°. A pane of glass should be put over each pan, covering this with a sheet of paper, as the seeds germinate more readily in darkness. Keep the soil moist, but on no account get it soddened, or disaster will result.

In about six weeks the seeds will have germinated, on the appearance of which the glass and paper must be removed and the seed pans placed as near the roof glass as possible. When germination has well taken place the pans should be removed to a house having a temperature of about 65°, again being placed near the glass. Keep the young plants moist, frequently spraying with the syringe. After being in this temperature for a month or so they may be taken to a house having a temperature of 55° to 60°, standing the pans on damp cocoa-nut fibre refuse, which will cause sufficient moisture around them at this season of the year. When the young plants are considered large enough they may be placed in 3-inch pots, retaining them in the same temperature, and standing them on damp fibre. A compost as advised before will be suitable for this potting.

Endeavour should be made to keep the seedlings growing steadily, being careful not to overwater, or they will damp off. As soon as these pots are well filled with roots the young plants may be transferred to 4 and 5-inch pots, according to the strength of the seedlings. The compost should consist of good fibrous loam, leaf mould, sand, with a little manure added. Pot firmly, raising the corm above the soil, as if sunk too deeply it is apt to decay. Keep the plants shaded from the sun both at this stage and in the earlier ones. A low heated house is best to place these plants in, where a temperature of 55° to 60° could be kept up should the weather prove cold. Use the syringe freely, both in the morning and afternoon, to induce growth and to keep the plants free from insect pests. As the pots become filled with roots gradually admit more air until the plants are sufficiently hard to be taken to a cold frame.

About the middle of September cease syringing and shading to induce the plants to have a hard sturdy growth. An occasional watering with weak liquid manure, or an application of some well proved fertiliser is very beneficial to them. Early in October house the plants where they are to bloom, previously cleaning the pots so that all may have a neat appearance. The temperature ought now to range about 55°. Should green fly make its appearance an application of "XL-All" will successfully eradicate it. When flowering commences it is surprising what a wealth of bloom, and how long these Cyclamen will continue to produce it.—SEMPER.



HARDY FRUIT GARDEN.

Outdoor Vines.—When the buds have pushed far enough to show the bunches the process of disbudding may be commenced. The growths nearest to the main branch ought to be retained if fruitful. One shoot bearing one bunch of fruit is sufficient for each spur. The removal or reduction of other shoots which are superfluous or ill-placed should also be carried out, the ultimate object being to retain only growths for which there is room for ample leaf development.

The spur growths require stopping one or two leaves beyond the bunch, when the shoots have advanced as far. If no bunch is present, and the shoot is retained, allow about seven leaves to form, stopping at that point and at every subsequent leaf afterwards. Lateral growths developing below the bunch rub out entirely; also train-in any strong shoots for filling vacancies, not stopping them before they have made growth 4 feet in length. Tying-down must be done gradually. It is best, unless crowded, to allow them to advance well before tying finally.

Strawberries.—*Mulching.*—The application of a layer of manure with a view to affording nourishment for the roots, conserving moisture, and forming a clean bed for the fruit when ripe, ought now to be carried out. Partly fresh farmyard manure is the best material. Should there not be a good proportion of litter among it, a layer of clean dry straw may be used later for the fruit to rest upon.

Feeding.—A dressing of nitrate of soda (1 oz. to the square yard) is a good stimulant for Strawberries given when the flower trusses show or just as the fruit sets. Water, liquid manure, or house sewage will also prove valuable aids in assisting the swelling of good crops of fruit and strengthening the growth, whereby bold buds will be built up for the succeeding year.

Young Plants.—Recently planted Strawberries or small plants placed out late in autumn ought not to be allowed to fruit this season. All should, however, throw up flower trusses; but when it is seen that they have done this pinch them off, thus encouraging the plants to make vigorous growth, and bold crowns produced. If planted in good soil on firm ground, hoed frequently, the runners kept closely cut off, and the soil lightly mulched in hot weather, there will be little difficulty in producing good plants.

Gooseberries.—Bushes showing any indications of being attacked with the larvæ of the Gooseberry moth should have the foliage dusted with soot and lime. Hellebore powder dredged over the bushes will kill all the caterpillars it touches, but as it is of a poisonous nature the green fruit when gathered ought to be well washed if this remedy is employed. The larvæ are very destructive to the leaves, completely eating up the green tissue. Soot is not only a good insecticide, but acts well as a manure, making the soil quite black with it. When bushes have set a good crop of fruit, and are free from caterpillars, a manurial mulch may be spread over the roots, which will largely assist the development of the crop by conserving the moisture in the soil. Cordon trees growing at the foot of walls will be especially benefited by a liberal mulch over the roots, further assisting them if the soil is dry by copious applications of water and liquid manure.

Red and White Currants.—Whether growing as cordons against walls or bushes in the open, a mulching of decomposed manure will be serviceable applied when the fruit is set.

Peaches and Cherries.—These trees are subject to early attacks from aphides, which infest the points of young shoots. Trees which may be growing in exhausted soil, or suffering from dryness at the roots, are almost certain to be attacked. In addition to well syringing the trees, and destroying the insects with some effective insecticide, the border must be thoroughly moistened to the full depth of the roots. Quassia

chip solution, softsoap mixture, soluble petroleum, Gishurst compound are all inimical to insect life, but every cultivator has his favourite remedies. Promptness in applying them when the insects are first seen is of great importance, and will prevent much labour in destroying them later on. If allowed to increase on the young shoots of Cherry trees to the extent they sometimes do, nothing short of dipping each individual shoot in a fairly strong solution, gently rubbing to displace the insects, will have much effect. For this purpose tobacco juice and softsoap is a safe remedy. Dissolve 2 ozs. of softsoap in a gallon of hot water, mixing in a pint of tobacco juice. Use when sufficiently cool. Give a thorough general syringing to the trees the following day, and frequently in warm weather.

FRUIT FORCING.

Cherry House.—With the fruit ripening syringing must cease, the Cherries being kept dry, but atmospheric moisture should be furnished by keeping the surface of the borders moist. Admit air constantly, as if condensation take place the fruit is seriously affected, cracking, and becoming impaired in quality. If necessary a thorough supply of water should be given to the border. Tie in the shoots as they advance, and stop those not required for training at about the fifth leaf. If black aphides are troublesome, dip the infested shoots or leaves in tobacco water or some approved insecticide, rubbing them gently with the fingers whilst wet. Ventilate freely on all favourable occasions, having recourse to the heating apparatus when the external conditions are unfavourable to insure a circulation of warm rather dry air. Trees in pots require abundant supplies of water and nourishment. Place some netting over the ventilators to prevent birds attacking the Cherries.

Vines.—*Early Houses.*—Where the Vines are infested with red spider or thrips let immediate remedial measures be taken, or not only will this year's crop be damaged, but next year's will be prejudiced. The judicious use of nicotine fumes or vapour is the best remedy for thrips, and to some extent for red spider, application being made on two or three consecutive evenings, repeating at intervals of a few days so as to destroy those escaping the first fumigation through being in the egg state. To annihilate red spider the use of sulphur on the hot water pipes has good results, they being heated to over 170°, and between that and boiling point, then damping the surface with a wet cloth, and at once sprinkling on the sulphur very lightly. The pipes should be kept hot for about an hour, the ventilators closed, and care taken not to give an overdose, and then the heat may be allowed to fall to the ordinary degree. Early Grapes that are ripe will only require enough fire heat to maintain a circulation of air, allowing the temperature to fall to 60° at night.

Second Early Houses.—The fruit of Vines started at the new year is commencing to colour. No great pains should as yet be taken to produce a dry condition of the atmosphere, as the Grapes swell considerably in ripening. Maintain a moist atmosphere in the early stages, sprinkling the house in the early part of the day and at closing time. Provide a little ventilation constantly, to induce a change of air and prevent the deposition of moisture on the berries. Maintain the temperature at 70° to 75° by day from artificial means, and 80° to 85° through the day from sun heat, falling to a night temperature of 60° to 65°, but 65° to 70° is necessary for Muscats. As the fruit advances in colouring the moisture should be reduced gradually, and the ventilation increased, but there must not be any diminution of the temperature until the Grapes are thoroughly ripe. The inside border must have due supplies of water or liquid manure, and a mulching of short material.

Succession Houses.—The remarks as to thinning, disbudding, stopping, and tying given in former calendars still apply—especially let all superfluous bunches be removed as soon as the number to be left on a Vine is decided. Examine the borders of all succession houses at least once a week, and when dry supply water freely. Inside borders will take almost any quantity of water after the Vines are in full foliage, and with a heavy crop of Grapes supply liquid manure at every alternate watering. Outside borders, except in special cases, will not as yet require water.

Late Houses.—The Vines making rapid progress must be tied, and stopped as soon as they have made sufficient growth to cover the trellis with foliage. Every care should be taken to secure good colour and firm texture in the leaves by free yet judicious ventilation. Take advantage of sun heat to increase the ventilation early in the day, but close early, excessive fire heat being injurious and costly.

Unheated Houses.—The Vines are making rapid progress, and in many instances the growths will require disbudding, stopping, tying, and otherwise regulating. One shoot is sufficient to each spur, unless they are wide apart, when two may be left. Reserve those that show the best bunches, rubbing the others off. Stop two joints beyond the bunches, but rather than crowd the foliage stop to one joint. Tie down the shoots carefully and gradually. Old Vines sometimes do not bear freely on spurs, being weak. It is best to lay in shoots from the base and along the rods at intervals of 2 or 3 feet in such cases to increase the root action. Apply a light dressing of artificial manure to the border, and point it lightly in. Inside borders may be given tepid water or liquid manure, when dry a thorough soaking, and a mulching of short rather fresh stable manure will, by keeping the surface moist, encourage active roots.

Newly Planted Vines.—With advancing growth—an evidence that the roots are active—close attention will need to be given to the roots to see that they do not suffer from over-dryness. Allow all the wood to remain that can be exposed to light, but supernumeraries intended for fruiting next year should be confined to one rod or cane, and the laterals pinched at the first joint, and to that of subsequent growths, stopping the canes at 6 to 8 feet.

THE BEE-KEEPER.

STARTING BEE-KEEPING.

WHEN is the best time to start bee-keeping? is a question we are often asked; and as we recommend spring in preference to autumn for beginners to make a commencement, a few notes on this subject may now be of interest. There is great advantage in making an immediate start, as a healthy stock or swarm early in the season, if carefully managed, should more than pay for itself the first year. But which is preferable? someone may ask. We prefer a stock headed by a queen reared last summer, and as there are numerous stocks of bees still kept in straw skeps in various parts of the country, these may usually be obtained at a reasonable rate.

For preference select a cast, or an old stock that swarmed last year; the former will have combs of a better colour than the latter, but this is of small consequence, as they will be melted down at the end of the season.

But what is of more interest to the bee-keeper, each colony will be headed by a young fertile queen. Before selecting a stock, observe the bees at work during the middle of a fine day. If they are passing into their hive at a rapid rate, each bee being laden with pollen, it will be pretty safe to assume they are in good condition. It is, however, advisable to examine the combs, to see if there is any trace of disease. Lift the hive quietly off its stand; if the bees are likely to be troublesome, a puff or two of smoke will drive them up between their combs. The latter should be straight, so that it is possible to see the amount of brood in each. At this date all the combs, with the exception of those on the outside, will be filled with brood in various stages of development. The hive, too, should be crowded with bees, and when found in this condition may be purchased, with every prospect of the bees doing well.

If a swarm is preferred, obtain it as early in May as possible; and should the weather be at all unfavourable after being hived, feed with warm syrup each evening for a week, or as long as the bees may require it. They will then take advantage of the first spell of fine weather, and store a surplus; whereas if left to take their chance, but little headway would have been made.

TREATMENT OF BEES IN SKEPS.

If the bees obtained are in straw skeps as above, it will be an advantage to obtain a swarm from them as early as possible, and it is better for the beginner to allow them to swarm naturally than to attempt to take an artificial swarm, although the latter operation is very simple when the operator has had a little practice. It is safe to allow the bees to settle the swarming business themselves until experience is gained.

Bee-keepers should remember that it is only during hot or bright days that bees will swarm naturally, and if the weather is dull and cold for several days in succession, it is no uncommon occurrence during unfavourable seasons for two or three weeks to elapse in May and June when the bees have not obtained sufficient outdoor supplies for their daily requirements. When this takes place, although the bees may be on the point of swarming, the young queens being well advanced in their cells, the workers will tear down the cells and cast the grubs out of the hive. If stores are at all short in the hive they will also cast out the grubs from the drone cells, and last of all from the worker cells. This shows the necessity of giving them timely attention.

Instead of leaving stocks to chance at this critical period they are provided with thin syrup daily until a change in the weather takes place, all will go on well. The bees will increase at a rapid rate, and although the young queens may be destroyed, others will be raised, and the first fine day that comes there will probably issue a strong swarm from this colony, followed by a cast a few days later. This will be in marked contrast to those that are left to take their chance when the weather is unfavourable. If treated as advised above success instead of failure will be chronicled.—AN ENGLISH BEE-KEEPER.

AN IMPROVED GARDEN HOSE.—The trouble experienced by many persons with garden hose bursting, kinking, or rotting is met by another important improvement in this article by Messrs. Merryweather. This firm has been successful for many years in manufacturing durable garden hose. The latest method of securing durability for the hose consists of an external coating of fine quality rubber of substantial thickness, which effectually prevents the canvas plies being soaked with water, as in ordinary hoses, and prevents rotting, which soon means the destruction of the hose. The ends of each length are also hermetically sealed with rubber to protect the canvas from water. To give flexibility, this has an internal coating of the best and most pliable rubber, and thus kinking and consequent stoppage of the flow of water, causing bursts in the hose, is prevented.

TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **8. Rose Hill Road, Wandsworth, S.W.**, and **NOT** to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Cinerarias (E. A.).—The flowers sent are admirable for decorative purposes, and are probably from some good continental strain. These have not the perfect shape of the best English selections, but are by no means to be despised. Several of the specimens were between 3 and 4 inches in diameter. The flowers were of good substance and the colours splendidly diversified, while we observed on them some excellent specimens of the green fly, which is such a close ally to Cinerarias.

Daisies on a Lawn (C. F. M.).—The presence of Daisies in lawns is nearly always indicative of poverty of soil. An excellent dressing is a mixture of superphosphate of lime and nitrate of soda, two-thirds of the former and one-third of the latter applied during showery weather at the rate of 2 ozs. per square yard at intervals of a fortnight. If dry weather prevail it is a good plan to well water the lawn before applying the fertilisers, and then again afterwards to convey their virtues to the roots of the grass. Mixtures of guano and salt and soot and salt also act beneficially, so also do bonemeal and wood ashes. We mention these different ingredients in order that you may use what is the most convenient or readily obtainable. The most effectual mode of destroying Dandelions and Plantains is to drop a little sulphuric acid into the heart of each plant. Many persons have found lawn sand effectual in destroying Daisies.

Lophospermum scandens Diseased at the Collar (R. G.).—No doubt the soil has helped to produce the decay at the collar, as from the strong moisture-holding nature it would favour decay. We found, however, some root-stem eelworm (*Tylenchus obtusus*), and these, we consider, caused the decay of the root stem, the pest restricting its attacks to those parts of the plants, whether Cucumbers, Gardenias, Ixoras, Bouvardias, Carnations, Vines, or Tomatoes. The best remedy is an application of two parts air-slaked chalk lime and one part kainit, using 6 ozs. per square yard. Of course, the application will not restore plants to health that have their tissues destroyed, but it will prevent and check the spread of the evil. In cases of attack we have found Little's soluble phenyle effective, using at a strength of a wineglassful (two fluid ounces) to 3 gallons of water, or one part in 480 parts by measure, repeating occasionally.

Tomato Plants Diseased (J. B.).—The plants, of which you submit specimens, are infested by the Tomato "curl," "sleepy disease," or "sudden collapse" fungus (*Fusarium Solani*, syn. *F. lycopersici*) in a remarkable manner, the attack being confined to one side of the stem, and traceable in it to the base of the first flower truss. This the mycelium of the parasite has not entered, but was making its way there as fast as it could grow. The disease has evidently proceeded from the root, though you have not sent that portion, but only the side with roots attached. Immediately above these roots the bark has separated from the underlying woody layers, these being destroyed, but the bark quite sound, yet the said roots emanate from the diseased tissue, and inside the bark woody layers are formed. The phenomenon, therefore, somewhat resembles that of a hollow tree whose "heart" has been eaten out by one or other of the wood fungi, and explains the reason why earthing up Tomatoes affected by this disease may, by encouraging roots from the collar, prolong the life of the plants and insure fair crops of fruit. This, however, can only occur in certain cases, and in yours the fungus has got high up in the plant. However, you can try the placing of some fresh soil about the stems after first dressing the plants with air-slaked chalk lime.

Dusty Miller (*J. J.*).—We do not know whether the small flower you send is the veritable "Dusty Miller" or not, but we know that it very closely resembles *Primula Auricula*, and also know that the yellow form accompanying it is of thrice the size, and of infinitely greater decorative value. We will see if a comparison can be made with varieties of a similar character.

The Golden Club (*Improver*).—The botanical name of this plant, which is a handsome though scarce aquatic, is *Orontium aquaticum*. It is well suited for shallow water, but may be fully immersed when severe frost is expected. The fact of the plant being so rarely met with may be accounted for in a measure by its somewhat slow growth, and it is by no means one of the easiest to increase by division; at least, such is our experience of it. It was introduced into this country a century ago from North America, and as it is still only occasionally seen it is quite possible that it has never reached our shores in quantity, or that the majority of the earlier importations were lost. It does not produce seeds nearly so freely as many other members of *Aroideæ*, to which it belongs, and this also may contribute to its scarceness.

Smilax (*Myrsiphyllum asparagoides*) (*Amateur*).—Perhaps the freest growing and best plants are those raised from seed, which should be sown as soon as ripe. It is also increased from cuttings of the young side shoots with a heel or young shoots when about half ripe, or getting rather firm at the base. Insert in sandy soil surfaced with sand, and place in gentle heat, covering with a bell-glass, and keeping rather close and moist until rooted, then harden and place in pots. When the plants are large the roots or crowns may be divided into as many parts or growths as can be detached with a portion of root to each, operating early in the spring. A compost of good loam two parts and one part leaf, with half a part of sand, suits it. It succeeds admirably in a warm conservatory, and planted out where the growths can be trained up a pillar or rafter.

Chrysanthemum Leaves Diseased (*W. T.*).—The leaves, so far as we can discover, are not infested by rust fungus (*Uredo chrysanthemi*), but by the yellow leaf-spot fungus (*Ovularia chrysanthemi*), an undescribed species nearly related to *O. epilobi*, which causes the leaves to become yellow-spotted, afterwards brown and dead. It may be arrested by spraying with potassium sulphide, $\frac{1}{2}$ oz. to a gallon of water, or even with sulphuret of lime, but this article varies so much as to be less reliable than the liver of sulphur. The fungus is the chief cause of the leaves dying from below upwards as produced on the stem, and is wholly endophytic in mode of life, but produces the "fruits" or conidia externally, and by these the parasite spreads from leaf to leaf, not internally by mycelia in the plant. Give the plants more air and less stimulating food, using phosphates in preference to nitrogenous substances.

Gymnogramma chrysophylla (*Fern Lover*).—This charming and deservedly popular Fern requires a night temperature of not less than 55° in the winter and a moist atmosphere without the foliage being wetted. If your plant requires repotting use a compost of sweet leaf mould one-half, turfy yellow loam one-half, and fibrous brown peat one-fourth, adding one-sixth of silver sand, the whole well mixed and broken with a spade, but not sifted. Pot rather deeply, but not so much as to cover the crown. The plant should be set in the lightest part of the house, have room on all sides, and be not more than 18 inches from the glass. The soil should be kept moist, but not wet, until the roots are working freely, and the temperature may range from 60° to 65° by night. By day it may be 70° without sun, and from 80° to 85° with it, shade being afforded from 9 A.M. to 4 P.M., when the sky is clear, but when cloudy do not shade at all. No shade will be needed from September to April. The plant must always have the soil moist, but no water should be given until it is really needed, then afford a supply sufficient to show itself through the bottom of the pot. If your plant grow as well as we expect, it will need a shift by the end of July, or at latest by the third week in August, so that the pot may be filled with roots before winter, as it will be in six weeks after potting if a 10-inch pot be given. From that time no more water should be given than is sufficient to prevent the soil becoming dry, and if a sufficiently moist atmosphere be maintained it will winter safely in a temperature of 60° at night, and occasionally as low as 55° or even 50°, but this degree must be seldom reached.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*V. A.*)—1, *Saxifraga pectinata*; 2, *Tiarella cordifolia*; 3, *Ledum latifolium*; 4, *Kerria japonica flore-pleno*; 5, *Galeopsis dubia*. (*P. B.*)—1, *Doronicum excelsum*; 2, *Pyrus malus floribundus*; 3, *Spiraea prunifolia*; 4, *Trillium grandiflorum*; 5, *Spiraea bullata*; 6, *Aubrietia deltoidea*. (*W. W. J.*)—1, *Lonicera tatarica*; 2, *Doronicum caucasicum*. (*O. R.*)—1, *Primula verticillata*; 2, *Sanguinaria canadensis*; 3, *Scilla nutans*; 4, *Omphalodes verna*. (*Y. P.*)—1, *Oncidium Marshallianum*; 2, *Lælia purpurata*; 3, *Cymbidium Parishii*. (*Somerset*.)—*Sedum Rhodiola*.

COVENT GARDEN MARKET.—MAY 4TH.

FRUIT.

			s. d.	s. d.				s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	...	...	1	6 to 4	0	Grapes, lb....	...	...	2 0 to 3 0
Cobs ...	...	...	21	0	2 6	Lemons, case	...	...	11 0 14 0
Filberts, 100 lbs.	...	...	0	0	0 0	St. Michael's Pines, each			2 6 5 0

VEGETABLES.

		s. d.	s. d.			s. d.	s. d.
Asparagus, per 100 ...	...	0 0	0 0	Mustard and Cress, punnet	...	0 2	0 4
Beans, $\frac{1}{2}$ sieve ...	...	0 0	0 0	Onions, bushel ...	...	3 6	4 0
Beet, Red, doz. ...	...	1 0	0 0	Parsley, doz. bnchs. ...	...	2 0	3 0
Carrots, bunch ...	...	0 3	0 4	Parsnips, doz. ...	...	1 0	0 0
Cauliflowers, doz. ...	...	2 0	3 0	Potatoes, cwt. ...	...	2 0	4 0
Celery, bundle ...	...	1 0	0 0	Salsafy, bundle ...	...	1 0	0 0
Coleworts, doz. bnchs. ...	...	2 0	4 0	Scorzoneria, bundle ...	...	1 6	0 0
Cucumbers ...	...	0 4	0 8	Seakale, basket ...	...	1 6	1 0
Endive, doz. ...	...	1 3	1 6	Shallots, lb. ...	...	0 3	0 0
Herbs, bunch ...	...	0 3	0 0	Spinach, pad ...	...	0 0	0 0
Leeks, bunch ...	...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	...	1 6	1 9
Lettuce, doz. ...	...	1 3	0 0	Tomatoes, lb. ...	...	0 4	0 9
Mushrooms 1 ...	...	0 6	0 8	Turnips, bunch ...	...	0 3	0 4

PLANTS IN POTS.

		s. d.	s. d.			s. d.	s. d.				
Arbor Vitæ, var., doz.	...	6	0 to 36	0	Ferns, small, 100	...	4	0 to 8	0		
Aspidistra, doz.	...	18	0	36	0	Ficus elastica, each...	1	0	7	0	
Aspidistra, specimen	...	5	0	10	6	Foliage plants, var., each	1	0	5	0	
Azalea, per doz.	...	24	0	36	0	Genista, per doz.	...	6	0	9	0
Calceolaria, per doz.	...	8	0	12	0	Lilium Harrisii, doz.	12	0	18	0	
Cineraria, per doz.	...	6	0	9	0	Lycopodiums, doz.	...	4	0	6	0
Dracæna, var., doz.	...	12	0	30	0	Marguerite Daisy, doz.	...	6	0	9	0
Dracæna viridis, doz.	...	9	0	18	0	Mignonette, doz.	...	6	0	8	0
Erica Cavendishi	...	18	0	30	0	Myrtles, doz.	...	6	0	9	0
„ various, per doz.	...	12	0	24	0	Palms, in var., each...	...	1	0	15	0
Euonymus, var., doz.	...	6	0	18	0	„ specimens	...	21	0	63	0
Evergreens, var., doz.	...	4	0	18	0	Pelargoniums, scarlet, doz.	4	0	6	0	
Ferns, var., doz.	...	4	0	18	0						

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2 0	to 4 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Arun: Lilies, 12 blooms ...	3 0	4 0	Myosotis, dozen bunches...	2 0	4 0
Asparagus, Fern, bunch...	2 0	4 0	Narciss, dozen bunches ...	1 0	3 0
Azalea, dozen sprays ...	0 6	0 9	Orchids, var., doz. blooms	1 6	12 0
Bouvardias, bunch ...	0 6	0 9	Pelargoniums, doz. bnchs.	4 0	6 0
Carnations, 12 blooms ...	1 0	3 0	Polyanthus, doz. bunches	1 0	1 6
Daffodils, doz. bunches ...	2 0	6 0	Primroses, dozen bunches	0 9	1 0
Eucharis, doz.	3 0	4 0	Roses (indoor), doz.... ..	0 6	1 6
Euphorbia jacquiniæflora, per bunch	1 0	2 0	„ Red, per doz.	2 0	4 0
Gardenias, doz.... ..	1 0	3 0	„ Tea, white, dozen ...	1 0	2 0
Geranium, scarlet, dozen bunches	4 0	6 0	„ Yellow, doz. (Perles)	1 0	2 0
Lilac (French), bunch ...	3 6	4 0	„ Safrano (English, doz.	1 0	2 0
Lilium longiflorum, 12 blms	2 0	3 0	„ Pink, dozen	3 0	5 0
Lily of the Valley, 12 sprays	0 6	1 0	Smilax, bunch	2 0	3 0
Maidenhair Fern, dozen bunches	4 0	8 0	Tulips, dozen bunches ...	2 0	4 0
Marguerites, doz. bunches	3 0	4 0	Violets, dozen bunches ...	0 6	1 0
			„ Parme (French), bunch	2 6	3 6
			Wallflowers, doz. bnchs....	1 0	3 0



OUR WONDERFUL WINTER.

It is a very easy thing to be too premature in one's remarks. There is a great deal of shouting before the edge of the wood is reached, and we have kept clear of this subject till we felt sure that hoary King Winter had been succeeded by the Spring Queen.

The calendar lines for to-day are very apt, but of course Tennyson was a close observer of Nature.

The damp hill slopes were quickened into green,
And the live green had kindled into flowers,
For it was past the time of Easter Day.

We say advisedly "the wonderful winter," for in all our memory we cannot recollect one less shrewd and rough. We looked for a change of weather at the autumn equinox, but lo! the change was for the better, not for the worse. A lovely Michaelmas, a perfect October, to all intents and purposes frostless and dry. The outdoor Chrysanthemums flowered themselves to death. November's days were by no means what they generally are—dark they must be, as there is no power to detain the sun; but drear they were not. We kept thinking St. Martin

would be ushered in with snow and frost, but he came and left again with a smiling face. Christmas drew on. There was a question as to how bacon would cure in the mild, tepid atmosphere, but the wisecracks said, "Oh, by the time the pig is killed and cut up, the weather will be sharp enough;" but it was not. We do not live in the sunny South, but in a cold, bleak district of—never mind where; and yet there was only one day on which the ponds bore, and that was December 25th. Alas! by Monday all trace of ice had gone, and young and old pleasure seekers were grievously disappointed.

It is not often we lie awake in winter thankfully listening to the rain on the window pane. Time after time the clouds gathered up, and we hoped for downfall of some kind—snow, of course, being expected—but no, the clouds rolled off again. It is rather a strong record—in our diary—only three wet days in December, and the entry "beautifully fine" occurring so many times, and a rain spoken of as "opportune." It must have been greatly desired.

We have noted for long that January is often a dry month, except there be heavy snowfalls, but although at times the sky was leaden the air was never really cold, as it is before coming snow, and the snow never did come, and the rain but seldom. There may have been two rainy days, and possibly a heavy shower or two, but that was the outside. No work for plumbers; no slack time for men or horses.

One does not often dawdle about in the garden for pleasure in January, but bright sunshine and fresh air are very tempting, and the garden never had a wintery look.

Who has not heard of snow pancakes for Shrove Tuesday? Well, those who waited for snow to make that delicacy will be waiting still. The situation was in February getting serious—no rain, no frost to mellow the land, and worse than that, the watercourses were all dry and springs failing. With dry watercourses in February we could only hope the blustering winds of March would prove damp winds. The 1st came stormy winds and whirling snow—not to stop—evening saw all clear again, and bright as a May day. On the 15th we thought we were in for a change, and were thankfully getting wet—only just a little top moisture, enough to vex without doing material good. On the 23rd the bright weather left us, and then came bitter blasts; but, alas! the rainfall was still very light. We had never felt so miserable for months. Talk about the skinning process; why, you had only to walk across the garden to be literally flayed. Happily this state of things did not last long, and we really suppose some coarse weather was our due.

By April 1st the sun again was in the ascendant, and Good Friday broke a peerless day; blue skies, balmy breezes—so soft, so mild, so glorious. For pleasure seekers Easter Day was not so perfect, so we hailed the showers with acclamation, and the steady downfall of Monday, followed by a "droppy" week, has put us all in good trim.

Dwellers in town have little notion perhaps as to the extent of this last winter's drought. Dry winters they do not look for and do not understand; but to country folks, who have water to lead for stock in February, the prospects are ominous. But for this anxious care for the future we should have engaged every hour of the past winter. Perhaps we are too tender, but the cold does so nip, and this year there has been such abundance of fodder and roots that there has been enough and to spare. The bodies of our stock have been warm inside and out, and that is a very comforting reflection to the owner.

From October 1st to March 31st there were 110 warm days, twenty-eight of which fell in January. March stands at the head of the cold months. December was the only month of the six with anything like an average rainfall, and even these rains were exceedingly partial in their nature.

During the last half century there have only been two winters with a smaller rainfall, and they were those of 1879–80 and 1858–9, and in the same period only four warmer ones. To one set of sportsmen this dry winter has been a great nuisance—we mean the hunting fraternity. Several early meets had to be postponed altogether because the "going" was so fearfully hard, and even when things got into full swing men and horses experienced much damage and much hard knocking about. Horses' legs will not stand ground

as hard as a turnpike, and most men like at any rate to fall "soft." If the beginning were bad, the end was even worse, and many packs had to make a premature finish. We wonder if this year the Beaufort hounds will kill their annual May fox.

Good comes out of evil, and the demand for sound horses has been brisk. There is, we fear, many a good hunter who will spend this summer in retirement with a very doubtful chance of being fit for work by next November. Well, perhaps a "short life and a merry one" is not to be quite despised. This year in Bodo, N. Norway, up to January 20th there had only been two days when sledging was possible. Let us hope that the winter season of 1898–9 will not be Arctic in its severity, things and weather in particular do so love to go by the rule of contrary!

WORK ON THE HOME FARM.

Since last week we have had a change of wind to the east with sunny days and frosty nights; the dust is blowing in clouds past the window as we write, and we are beginning to think a little more rain would be very useful. Wheats are looking grand, and some are so big that harrows have little effect on them. The dry weather has made the harrowing go very well, these big Wheats could hardly have been harrowed under other conditions of weather. We have put a little more Barley in, and have now finished for the season. This last did not go in too well; the land was a bit strong, and recent sheep treading had made it very knotty.

The outbreak of war between Spain and the States has caused a boom in food stuffs. We are taking the chance of a clear-out of Potato pies, and have got all the spare seed off to market to be sold as seconds, whilst our last pie of ware has been sold at £6 per ton (on rails)—a very satisfactory clear out.

The hum of the thrashing machine has been more prevalent than is usual in April, so it seems that farmers are wise enough to see the advantage of selling their remaining stocks of Wheat whilst the market is on the rise.

Stoppage of American meat supplies is likely very shortly to raise the price of beef and mutton, in fact a rise has already begun. It would, therefore, appear that now is the time for the grazier to use artificial foods to assist the pastures in bringing stock to maturity, whilst home productions may have command of our markets.

We are having an excellent opportunity given us now to complete the cleaning of fallows. Few fields within our knowledge require more than one dressing over with drag, roll, and harrow to make them agriculturally clean.

Small seeds may be, and often are, sown amongst spring corn after the latter has come up. Where the land is very apt to produce weeds the practice is a good one, as the necessary harrowing, whilst covering up the small seeds, will destroy millions of small weeds. The Barley or Oats must, however, be well up and be fairly strong. The weather, also, must be dry, as spring corn will not stand harrowing wet. The weed question apart, we think that Clover and grasses should always be sown with the corn, as it is much the safest way to secure a good plant.

OUR LETTER BOX.

"Strong" Butter (E. A.).—Your letter shall have attention. It arrived one post too late for enabling an answer to be published this week.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain.
1898. April.	Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
		Dry.	Wet.			Max.	Min.	In Sun	On Grass	
	inches	deg.	deg.		deg.	deg.	deg.	deg.	deg.	inches
Sunday 24	30.200	49.8	42.4	N.E.	45.8	58.3	31.6	99.5	28.8	—
Monday 25	30.168	48.1	45.3	N.E.	46.0	57.2	34.9	96.3	30.9	—
Tuesday 26	29.891	47.1	45.1	N.	46.7	62.4	41.1	104.2	35.3	0.149
Wednesday .. 27	29.565	51.8	50.0	S.	47.9	58.3	47.3	76.1	47.2	0.207
Thursday .. 28	29.593	50.9	49.4	N.W.	47.8	57.6	43.2	84.8	37.9	0.011
Friday 29	29.593	51.4	48.4	S.	48.1	60.3	47.7	94.1	42.4	0.014
Saturday 30	29.602	52.2	47.8	S.E.	48.1	56.7	41.6	93.0	36.4	0.020
	29.802	50.2	46.9		47.2	58.7	41.1	92.6	37.0	0.401

REMARKS.

24th.—Brilliant all day and night.
25th.—Cloudy early, and occasionally during the day.
26th.—Overcast morning; frequent sun from 0.30 to 4 P.M.; showery from 5 P.M., and steady rain from 7.30 P.M. to 10 P.M.
27th.—Gleams of sun in afternoon, but generally overcast, and foggy and gloomy early and in evening.
28th.—Rain from 3 A.M. to 8 A.M., and dull drizzly morning; fair from noon, and sunny from 3 P.M.; cloudy night.
29th.—Overcast and dull morning; alternate cloud and sunshine in afternoon, with occasional slight rain.
30th.—Overcast, with almost continuous spots of rain or drizzle till 2 P.M.; generally sunny after 3 P.M., and clear night.
Another average week, but with a little more (and very welcome) rain towards the end.—G. J. SYMONS.

IMPORTANT NOTICE.

We very much regret to state that our Shop and Offices at Exeter Street, Strand, have been destroyed by Fire, but we have every facility at our Warehouse in MERCER AVENUE to carry on our business as usual, and are in a position to give our prompt attention to all orders on receipt, and despatch same day.

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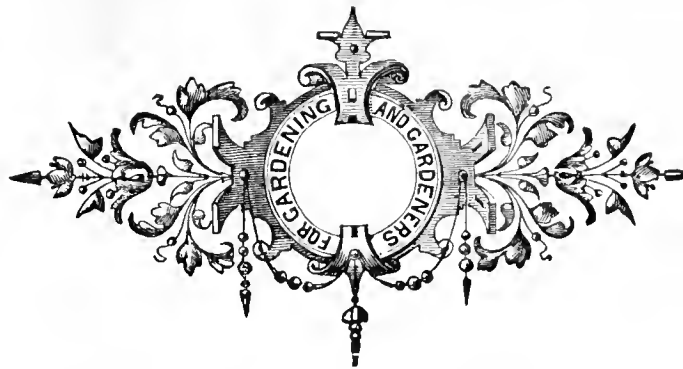
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Journal of Horticulture.

THURSDAY, MAY 12, 1898.

THE JOURNAL OF HORTICULTURE can be obtained from the Office, 12, Mitre Court Chambers, Fleet St. London, post free for a Quarter, 3/9. Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.

MAY FLOWERS.

AS the seasons come and go so do the flowers. They pierce the soil, bud, and flower, and pass away for the year. The Snowdrop has gone; the Crocus has followed suit; the early Scillas keep them company in their green array—soon to yellow with age before it is cleared away. These have gone with other early flowers, but there has come in their place a brave procession of the beauties of the time. The Snowdrop and the Spring Snowflake no longer droop their pure flowers, but the Summer Snowflake, taller, if less beautiful, nods upon its tall stems. The Crocus has vanished, but the Iris has come. The early Squills have fled from the brighter sun, but the Spanish and the nodding Scillas take their place. The Trumpet Daffodils have nearly left us for the year, but after them have come the pure discs of the Poet's Narcissus, with its fiery margined cup. We need not further elaborate the thought, but glance for a moment at the gay scene before us in the palace of Flora.

Fragrant and beautiful are the starry blossoms of Magnolia stellata. Pure do they seem as we stand a little away, but as we look more closely we see they bear a tinge of blush. One of the neatest and best of the Lily Trees for the rock garden is this species, and worthy to be grown where flowering shrubs find a welcome place. Not far off is the little Almond, known to botanists as *Prunus nana*, but perhaps more familiarly to gardeners as *Amygdalus nana*. For once we find the name recognised as correct more easily spoken than that more familiar. Pretty is this dwarf shrub, with its branches wreathed with pinkish flowers.

Ere the Daffodils have gone the Tulips have come. It is long since some appeared in bloom, but it is in May the greater number charm us with their perfect form and brilliant hues. It is pleasant to see them again in greater favour. In groups among other plants in or out of flower they please us better than in formal lines or beds alone. Delightful are their colours: white, scarlet, crimson, rose, pink, yellow, orange, white, parti-coloured, striped, margined. Who can in brief space tell the colours and combinations they show?

Drooping from the rock-garden's slopes is a fountain-like bush of green and cream, or perhaps more truly creamy white and green. Attractive is it a little way off, but if we go nearer we find it more beautiful still from its flowers possessing the favourite form of the leguminous plants. It is *Cytisus præcox*—the Cream Broom, a hybrid raised at Warminster by the late Mr. George Wheeler some thirty years ago. It is presumably a hybrid, although this is not certain, as it was found in a bed of seedlings of *C. purgans*, but it has been suggested that it is between that species and *C. albus*. However this may be, the Cream Broom well deserves to be grown in the rock garden or the shrubbery, where its wand-like branches covered with pale sulphur blooms can be appreciated. For a rather dry and sunny spot few prettier plants can be found for blooming in the end of April or the beginning of May.

The snowy *Arabis* is getting past its best just when the purple *Aubrietias* claim its comradeship by way of contrast to their colours; but though the *Arabis* forsakes them, the *Aubrietias* have purer companions in some of the Candytufts, whose sheets of white glisten on the rockwork or in the border. There are pink *Iberises* such as the Gibraltar Candytuft; but these are not so much admired as the white species and their varieties. Delightful are the mounds or curtains of white made by the larger growing plants; but for a choice place none would be more acceptable than the variety known as Little Gem. Only 3 or 4 inches in height, a miniature *Iberis sempervirens*, it is of great beauty, and nestling here a little lower than the beautiful *Rhododendron ciliatum* it has come into bloom when this alpine Rose has lost its flowers, and has given a new feature and a new attraction to the spot.

In a shady border, half hidden by the leaves and flowers of the ubiquitous *Claytonia caroliniana*—which, like a weed, has invaded its domain—is a clump of the modest little Canadian Violet, *Viola canadensis*. Small are its blossoms, faint is its perfume, modest its colours, yet its simple beauty compels admiration, even though near it grow some of the modern *Violas*, more opulent perhaps in their charms. As one looked just now at its dainty little white flowers with yellow eye, a few short purple rays, and with two of the upper petals coloured with purple on the back, there was espied beside it a single bloom of a tiny fellow flower of the little golden *Viola biflora*. Two years ago these plants of the Canadian Violet bloomed in Ontario; last year and this year they look equally happy in fair Scotland among sisters from other lands. A garden of hardy flowers is a little cosmopolis—one, too, in which flowers from many countries live side by side in harmony.

From North-West America comes the Celandine Poppy, *Stylophorum diphyllum*, whose blossoms are, perhaps, more welcome later in the year than now, when *Doronicums*, *Alyssums*, *Adonises*, and other yellow flowers are plentiful. As yet, however, there are hardly any of similar character in bloom, though in a few days the Welsh Poppy, *Meconopsis cambrica*, will be in flower. Like the latter, the *Stylophorum* appears to enjoy a little shade, and in a peaty soil thrives and flowers for some time. May is said to be its normal flowering month, but it generally anticipates its "book" date, and with April come its drooping yellow flowers above its glaucous, pinnatifid leaves. It is about 1 foot high. Since its introduction more than forty years ago it has made but little way towards becoming a common garden flower, though it is as easily grown as most of our cultivated plants.

These are a few flowers casually, as it were, selected from the array of the beauty of the dawn of May. It is almost bewildering in its variety—white and brown, and green and yellow, and chequered *Fritillarias*, sway in the wind; golden-eyed *Auriculas*, sweet *Primroses*, fairy *Cowslips*, bunched *Polyanthuses* shine from corners, slopes, and borders; rich golden *Doronicums*—the *Sunflowers* of spring—delight us with their many-rayed glooms; virgin-like *Wood Anemones*, with pale blue or sapphire sisters and their cousins, the *Crown Anemones* of more brilliant colours, open to the bright May sun; odorous *Wallflowers*, golden, blood red, deep brown, exhale delicious fragrance as the south wind touches their petals; the double *Marsh Marigold* (*Caltha palustris* fl.-pl.) shines by the edge of the Lily pool, where

buds of the *Nymphæas* begin to peer above the surface; arching heads of yellow blooms deck the big bush of *Vesicaria utriculata*, which will by-and-by be laden with its bladder-like seed vessels; the encrusted *Saxifragas* begin to send up their flowers, and the mossy species are in bloom, dark red as in *S. muscoides atro-purpurea*, pink as in *S. Rhæi*, or white as in the greater number; the *Forget-me-nots* are sheets of blue, as in the case of *Myosotis dissitiflora*, or budded for bloom as with some of the later species.

Many more flowers there are seeking to rival or enhance the beauty of the blossom of the trees, which are robed in the perfection of flower and leaf. The fair pages of the book of Nature are open before us. Let us joyously, thankfully, reverently study them, that our hearts may be cheered, strengthened and uplifted by the messages they bear.—S. ARNOTT.

NOTES ON MELONS.

It may be prejudice that prompts my conviction of the best Melons being grown in pits and frames, and of my not considering the present varieties any advance on the remarkably fine-flavoured Egyptian and delicious Persian, with the sugary Scarlet Gem. I may be wrong, but I certainly never find the palate satisfied by the Melons of the present time. That may be my misfortune, but will any grower tell us of any three modern varieties that come anywhere near the three named in green, white, and scarlet flesh respectively?

Perhaps no fruit is easier to grow than the Melon, and certainly not any worse produced at the present day. The majority are worth little, and cannot well be eaten without sugar, than which no greater condemnation can be evidenced. Is it that the advantages of the hot-water system are delusions, and the disadvantages of the fermenting material mode of culture the ideals of successful Melon production? When fermenting materials are well prepared, so as to be moist whilst fermentation is going on, the bed affords a steady supply of moisture to the roots. This is of great importance in a dry season, and points to Melons on the hot-water method not having enough or an irregular supply of water at the roots to account for their indifferent quality. Some of the old gardeners never watered their Melons after they were thoroughly established, for the simple reason that the plants did not require any after the roots struck into the moist fermenting materials. I have tried that many times, and found it answer admirably in some cases, but just as badly in others, so that the gist of the subject resolves itself into a matter of judgment and adaptation of practice to circumstances.

There need be no difficulty about procuring stable litter, as it is not much wanted as manure at this season, and there ought to be leaves if care has been taken to preserve them. Any old stuff will do, with just a "freshener" of stable litter to keep the whole compact, and to make up a bed about 3 feet in height on a place where the sun shines from rising to setting. I use the waste from Rhubarb and Seakale pots with any leaves left over, and a fourth of stable litter. A load of this will, therefore, put renewed "life" into three of spent material, and about a stone of kainit and two of basic slag puts heart into it for after work, as the stuff comes out quite mellow in autumn, and for top-dressing borders has no equal.

Seeds can be sown in small pots singly, and plunged in the bed, will shortly sprout, and the plants can be turned out when coming into rough leaf. But it is better to put a barrowful of soil in each light, and sow the seed as soon as the heat has warmed it. One plant in the centre of each light is better than two. The soil cannot be too firm, and it should be highest in the centre of the light, forming a very gently inclining mound, and covering the whole bed with soil.

COMPOST.

The best I have ever used for Melons, and that was in 1851, consisted of the top 3 inches of a rich alluvial pasture, overflowed in winter by the river giving the name to Wharfedale. That is near enough as to location, and nothing was added to it. Since then I have found pigeons' manure added to good strong loam make Melons grow, and even fowl manure is better than that from cows, stables, or farmyards. I regarded the pigeon manure as a discovery, and was going to send a note to the *Journal* in its *Cottage Gardener* days, but found it had been used in Persia for the growth of Melons "from time immemorial." Any good garden soil will grow Melons, especially with half a peck of pigeon refuse added to a barrowload. I found, however, that fowl house manure, where gypsum had been used for "sanding," answered even better, using a peck to a barrowload of soil. The point is to mix well, and place in compactly when neither wet nor dry, but in a pleasantly moist condition.

TEMPERATURE.

The heat from the bed seldom makes the soil hotter than 90°, just right for holding the hand in comfortably, and to make Melon seed push radicals or tap roots into the soil and bed. The cotyledons, or first leaves, open out boldly to the sun, and are broad, stout, and deep green. The stem may be an inch high and accord in thickness. Only

give a little air at 75°, and to 90° with sun. A mat over the light at night will prevent the heat falling below 65° in the morning, and by uncovering early the plants will grow sturdily. There must be no drawing up; most Melons being ruined before they reach youth by giving as much, or more, heat than is required to ripen the fruit. It is well, however, to observe more natural conditions. I give a little air at 75°, and let the heat rise as near 90° as possible while daylight lasts, closing early in the afternoon right through the season.—EXPERIMENTALIST.

(To be continued.)

PROFITABLE FRUIT GROWING.

(Continued from page 386.)

ABOUT the temperatures best suited to the Vine, I would say, speaking generally, that to get a high colour in white Grapes you must have a higher temperature than what is required for black. As a rule you cannot put high finish on black Grapes with hard firing. I know of two instances—one with Lady Downe's, the other with Gros Colman—where they were grown at the bottom end of houses which had a considerable rise. Owing to the cooler position they were always the last in the house to be thinned, and often quite a month behind others of the same kinds in the same place; but they were always the first to be black, and generally better finished than any of the others. I do not believe in any set temperatures to be scrupulously observed at set periods of the Vine's growth—such as 70° at night for Muscats, and so on. Go more by the weather and the health and constitution of the plants. A good and safe plan is to have sufficient pipes arranged in the house, and keep them warm but never hot, and the temperature will generally be right. Guard against fire heat on bright days, then the pipes cannot be too cool. Another point is not to wait until the temperature has fallen, but have it ready to keep up the heat, bottled as it were from the sun as long as possible. I consider a temperature of 70° too high if from fire heat. A high night temperature is weakening to most plants, the same as sleeping in close warm rooms is weakening to the individual. From a night temperature of 60° Vines will rise fresher and fitter for their day's work. No higher is required to set the most difficult kinds. I know Muscats, both Canon Hall and Alexandria, which are well set annually with an average night temperature of 55°. One other point in connection with heating—the arrangements of pipes. The sole use of pipes in any hothouse is to give off heat for the benefit of the occupants of the house. This should be noted and remembered, and made the first consideration. Other matters which are of secondary importance, such as where they will look best or be most out of the way, are often placed first. Now, anyone can see that the more the pipes are spread over the border, the better and more regular will the heat be distributed—not too hot here and too cold there. I would strongly recommend this plan not only for Vines but other crops as well. The inconvenience in working is only in name.

I do not think it good practice to keep the atmosphere dry and hot during the flowering period. If everything else is right you will get as good a set if the ordinary routine of damping is carried on and the temperature not increased; at least you will have less red spider by this method.

I have very little faith in the artificial aids generally recommended to assist Vines in setting a good crop, unless it be in the case of such sorts as Alnwick Seedling, where the reproductive organs are of peculiar and unusual construction; though I have seen this variety set thicker than any Hamburgh by a simple daily tap to the rods. It is wise, however, to assist in such cases, and I know of nothing better or speedier than a good-sized feather duster, which should be gently drawn over the bunches when in flower once a day. If the right material is not in the wood and buds the previous autumn, all the foxes' or rabbits' tails in the world will not give a good set. It is a very silly plan, and one often adopted with shy setting varieties, to leave all bunches on the Vine till after the flowering period, so that a better selection can be had if the set is bad. If a horse cannot draw one ton up a hill, it will not be likely to succeed any better with five tons. If your Vines will not set one dozen bunches, how do you think they will set five dozen? All bunches should be removed to at least one on a shoot as early as possible, and this on other kinds as well as shy setters. If your Vines appear healthy, but do not set well or go wrong at the finishing, lift their roots. I know a house 80 feet long that was planted with a mixed selection, including Muscat of Alexandria and Canon Hall. It cropped well for a few years; then, though the Vines did not make gross wood, they failed to set satisfactorily, shanked and shrivelled badly at finishing. The inside border was turned out, all roots taken up, half of the soil mixed with fresh, and put back and the roots relaid. This was all, and only the work of a few days. The following crop was splendid. The Muscats, both Canon Hall and Alexandria, which were the worst before, were now the best—perfectly set, no shrivelling, large, well-coloured berries, and not one shanked in the lot. An example is shown in the illustration (fig. 76).

Another important point is the best style of training to adopt. The close pruning single rod system, which is almost universal, I do not think the best. A method which allows the Vine to extend and occupy a larger space each succeeding year is not only the more natural way of training, but heavier crops and finer fruit can be maintained over a longer period, with less expense, in this way than the usual method. I have seen a bad case of shanking cured in one season by this extension system. A few Vines of Gros Colman were planted at one end of a span house. These were trained up the usual way and stopped at the top. They were inclined to grow strong, and the fruit shanked badly. Two leaders were allowed to grow from each, and trained down the other span, and left at pruning time the full length, or about 12 feet. They broke well and regular, and bore a splendid crop of large-berried bunches, and not one shanked. I am confident that for private establishments, as well as market, where a house is often devoted to one kind, much better results would be

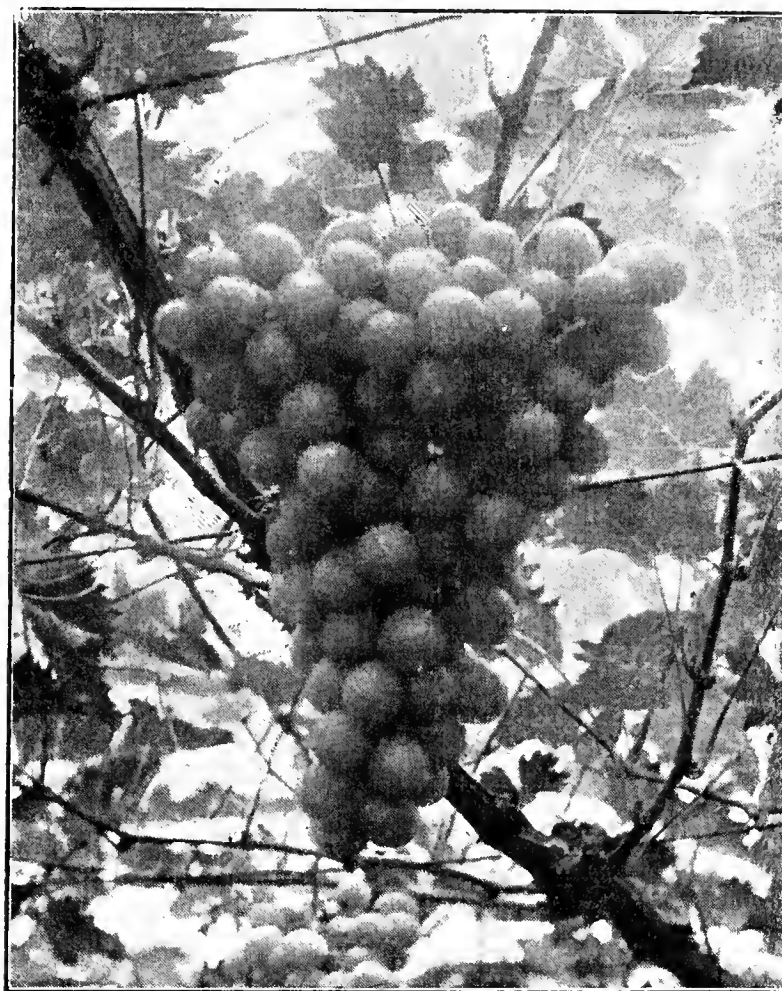


FIG. 76.—MUSCAT GRAPES.
THE RESULT OF BORDER RENOVATION.

obtained if one Vine filled the whole house. I have thought of a method whereby this could be done and not lose space while the Vine was extending.—D. BUCHANAN.

[The excellent photograph by Mr. Buchanan not only shows a well-shaped Muscat bunch, good thinning, and fine even-sized, well-finished berries, but also shows that he provides ample space between the laterals for the free development of foliage under the direct action of light, and thus, with otherwise correct treatment, insures leaves which make the most and the best of the materials supplied by healthy roots freely working in suitable soil. But even thinly disposed leaves cannot be of the best if a faulty method of ventilation is pursued by the abuse of front sashes during critical periods of growth. Mr. Buchanan's remarks on this subject (page 386) last week are in our opinion worthy of attentive consideration. We have more than once observed that those cultivators who grow the heaviest crops of Grapes, and make the most of them by sale, are those who admit the least amount of air through side ventilators; some admit none at all in that way, for the sufficient reason that moveable front sashes or slides are dispensed with in their vineries.]

(To be concluded.)

I AM glad Mr. Buchanan has called attention in last week's *Journal of Horticulture* to top ventilation. It is a matter which I wrote about long ago in the *Journal*. In the very last range of houses erected under my supervision each horticultural builder sending in plans showed bottom ventilation. This was struck out from the plan selected, but I had the ridge ventilation made to open separately on each side. This is a simple matter, the importance of which is known to all good gardeners; yet each builder showed back and front ridge ventilators to open together!—EDWARD LUCKHURST.

THERE is much that is sound and practical in Mr. D. Buchanan's "Profitable Fruit Growing," but it would be interesting to know something about the style of his vineries, and whether his advice is intended for southern as well as northern growers. I allude more especially to his remarks on ventilation. I have jotted down to-day (9th May) a few notes as to what has happened, and as I am not yet too old to learn I will ask Mr. Buchanan to tell us how he would have acted under the circumstances. I did not quite follow my own plan during the early part of the day, being anxious to travel with Mr. Buchanan as far as I safely could.

The day has been a typical spring day, more like April than May. It has been comparatively mild, with intervals of sunshine and passing cloud, and a little rain late in the afternoon. It was the sort of day so frequent during spring when you cannot tell what to expect during the next few minutes, and consequently it is not safe to go far away from the houses for any length of time. I do not say that Mr. Buchanan's advice is not correct for Scotland. I have no means for knowing that, having never practised further north than Liverpool, and of course the climate, and it may be the houses, are very different.

My remarks will be confined to one span-roofed compartment, 30 feet wide, with the roof at an angle of 35°, and one side facing south-west. It has ventilators, which are equal to a continuous opening of 18 inches on each side of the ridge, and upright sashes on each side at the bottom, which open continuously to fully the same width. This is more ventilation than most houses have, but I find it is often all required. My notes are as follows:—

5 A.M.—West wind, mild, some clouds, unsettled. Temperature of house 60°. Stopped fire.

7 A.M.—Shade temperature 65°. Opened top ventilators on leeward side half up.

9 A.M.—Shade temperature 70°. The same ventilators opened to their full extent, and the house damped down rather heavily.

10.30 A.M.—Shade temperature 77°. Opened top ventilators on windward side half up.

11.45 A.M.—Shade temperature 82°. Opened top ventilators to their fullest extent.

12 NOON.—Shade temperature 86°. Opened bottom ventilators on the leeward side to their fullest extent, when the temperature soon after rose to 90°.

4 P.M.—Rain clouds were threatening, and the wind increasing in force. Temperature had fallen to 75°. All ventilators were closed with the exception of the top ones on the leeward side, which were left up about 6 inches, and were finally closed at 6 P.M. From breakfast time till four o'clock the pipes were only about as warm as new milk.

I think Mr. Buchanan will see that it would be difficult to carry out his plan of ventilating here even on a mild spring day; it, of course, would be more so on a hot summer day. Even during the month of May I have sometimes had not only all the ordinary ventilators open, but the doors as well, before ten o'clock in the morning.—WM. TAYLOR, Bath.

[Our remarks above apply to a few acres of vineries within twenty miles of London. Our friend basks in the sunshine of Bath. His observations are, all the same, pertinent.]

HARMFUL AND HARMLESS GARDEN MOTHS—20.

DURING the month of May we notice that caterpillar life is in full activity, and hosts of these insects feast upon the young foliage or blossoms, also on the stems and roots that are rich with the juices of the spring. Now it often happens that when we are turning them out of their retreats, should we come upon them, we find caterpillars almost close together which have quite a different history. One has, perhaps, hatched from an egg laid early in April, and has fed up rapidly; the other is a survivor of the autumn, and its caterpillar life will be about eight months. Some have fancied that those which have hibernated exhibit in the spring heartier appetites than the insects of the new year; this is certain, that they stand the rough weather of the vernal season better, as a rule, than their juvenile companions not long from the egg.

Varied are the habits of insects even in the same group, and a few of the Noctua moths deposit eggs in autumn which do not hatch till spring. It might be advantageous to destroy these, but they are not easy to discover. The largish moth called the ranunculus (*Polia flavocincta*) appears in October, and the eggs then laid remain unhatched till April. It has often been noticed near London and in South England; probably it is a welcome morsel sometimes to a hungry sparrow. I do not see that the English name is particularly applicable, for the insect does not resemble the flower in its general aspect. But it has upon the greyish upper wings, which are mottled with brown, a row of six orange spots, on each of which is a black arrowhead pointing to the base; there are also four orange streaks near the middle of each wing. The caterpillar evidently starts in April upon Chickweed and Groundsel, but feeds later upon Mints, Thrift, and other garden herbs. It is velvety, green, sprinkled with white dots, having a narrow black stripe along each side, and enters the earth in July.

Another moth in the above genus, which, for a wonder, is commoner in Ireland than England, though it occurs about most of our

counties, if not plentifully, is the grey chi (*Polia chi*), a smaller species, white, or whitish grey, with various dark markings, one especially, resembling the Greek letter. A curious type of this moth, taken in the West, is of olive green colour, having white spots. The caterpillar hatches in spring from autumn eggs, eating Sallow or Hawthorn chiefly, something else at times; thus, in the Midlands, it has been caught defoliating the familiar Tea Tree, *Lycium barbarum*. In its green hue it resembles the larger caterpillar described above, a similar black stripe appears, but instead of dots two broad white stripes, and some black rings.

Hawthorn hedges furnish food to the caterpillar of the green brindled crescent moth, *Miselia Oxyacanthæ*, one frequent near London, and now feeding, but owing to the body being nearly the colour of the twigs, it frequently escapes notice; a hump, however, adorns the last segment, and there are a few white dots. The moth flies in September, hiding by day amongst shrubs. Over the reddish brown ground colour of the wings are sprinkled metallic green scales, and there is the crescent mark not uncommon amongst Noctuas; here it is pure white. One ranunculus moth has been mentioned; there is another, less in size, absent from many English counties, but plentiful in some localities. As its caterpillar chiefly feeds on the flowers and seeds of the garden Lettuce, it is one of our foes. This small ranunculus (*Hecatera dysodea*) appears during July, and is dark grey, marbled with light grey, and brown or black, specially distinguished, too, by scattered orange spots. The caterpillar is dull green, or now and then yellowish, having faint black stripes; it has a trick of suddenly dropping from its food to the earth if any person comes near, so often escaping.

We have in the genus *Dianthœcia* a little group of moths, several of which occur about gardens. They are notable for the fact that the caterpillars mostly live upon the pods of some species of *Lychnis* or *Silene*. The females generally have a long egg-placer, by which they insert eggs into the flower buds they select. One of the well-known species is the tawny shears, *D. carpophaga*, a variable moth, sometimes almost white, at other times a dark bistre brown, or of intermediate tints, but usually showing the two discoidal spots, set in a bar or band across the wings. During June eggs are deposited upon some *Campion*, the young caterpillar soon enters, and having consumed the unripe seeds of one flower head travels to another, keeping on at this until it has attained a good size; then it descends to the earth by day, and mounts at night, when it may be discovered with a lantern, the head buried in a pod, and the body very visible outside; this is smooth and plump, greenish grey, marked with broad white stripes. About eight months is spent by this species in the chrysalis state.

Another moth, called the lychnis, or *D. capsicola*, is rather like its relative, but the colour of the wings is generally brown, on which are the pale spots and some grey lines. It flies during summer. The caterpillar occurs in August or September on *Campions* or *Catchflies*, leaving conspicuous holes. From its mode of feeding when nearly adult, it must be an easy prey for birds. The body is slender and smooth, the head shining, but the body dull; on each segment is a mark, shaped like a V, of dark brown; in the middle of it is a small bar. The marbled coronet (*D. conspersa*) has a mark upon the thorax, thought to resemble a crown; the wings are smoky black, marbled and spotted with white. Less common than the preceding, it is scattered over Britain, but rare in Ireland. Its caterpillar prefers the head of the *White Champion* and *Ragged Robin*, concealing itself within these while it can. This also has the V-shaped markings on each segment, which are joined by a line running through them.

Both as a moth and caterpillar I think the majority of gardeners know the angle shades, possessor of the lengthy Latin name of *Phlogophora meticulosa*. The latter means "fearful;" but the insect is not particularly timid, only the caterpillar tucks in its head if alarmed, as do many others, sometimes forming a complete ring. Of course, the English name comes from the central mark of brown on the greyish-green fore wings; the under wings are rather pinkish. The thorax is conspicuous from its high ridge and long hair, which stands out like a ruff. This is one of the moths that has usually two broods yearly. In May and June we see the early brood—specimens are frequent on walls or trunks of trees; the second appears in September or later, developed from caterpillars of the summer. The moths now coming out are produced by caterpillars which, having hibernated, fed up during April. The cocoon is slight, and formed on the surface of the soil. In colour these caterpillars are of two shades, green or brown; both varieties are sprinkled with whitish dots. The head is small, and the body gradually enlarges towards the hinder segments.

We have, too, a small angle shades of a rich umber brown, somewhat similarly marked, but the bar across the wings has a large white spot. This is *Euplexia lucipara*, and flies in the summer. The caterpillar lives upon Ferns, especially the common *Brake*, during autumn. Its colour approaches that of its favourite food, being a delicate green above and paler beneath; along the back are faint black markings.

Mr. Wood enters in his book on our garden foes the handsome moth called the Marvel-du-Jour (*Agriopis Aprilina*), one distributed throughout Britain, flying in October and again in spring. He states that the Apple often suffers from the attacks of the caterpillar, which goes below during the day, hiding in the grass or herbage, then mounts the branches after sunset. There appears to be some mistake; we almost invariably find it on Oak, and I have never received specimens, or any complaint about its doings, since my connection with this journal. The moth is pale green, conspicuous from the black and white markings on the ground colour. It has been taken in gardens near woods. The caterpillar has a black cross on the face, and along the green or grey body a series of lozenge-shaped spots. Allied to this is the large dark moth called the great brocade (*Aplecta occulta*), which turns up occasionally in all English counties during the summer. Its caterpillar feeds on various low plants, such as the Primrose and Periwinkle, in spring. Probably from its striking colours of reddish brown and white it is apt to be seized by insect-hunting birds.—ENTOMOLOGIST.

PALMS.

FOR decorative purposes on ceremonial occasions of various kinds, also for balls, concerts, festivals, corridors, staircases, pedestals, or wherever stateliness with elegance in effect is desired, no plants can bear the least comparison with tall Palms. Their deep green arching leaves have a refreshingly cool appearance, however great the heat may be, while a tropical aspect is imparted such as no other plants can produce. No doubt Tree Ferns are imposing, and in demand for various functions, but light as the individual fronds may be in the aggregate as composing the "heads," they have a dense appearance as compared with the opener leafage of Palms, through which the light plays freely, throwing dappled shadows everywhere.

A few of the taller Palms most in demand are *Seaforthia elegans*, which is particularly stately, but not so easily kept in good condition as the *Kentias*, and of these *Kentia australis* is strikingly handsome in a large state. Of similar character but less towering in growth is *Kentia Fosteriana*, and still less so is the perhaps greatest in demand of all Palms, *Kentia Belmoreana*. For producing an effect of airy lightness by its few slender leaves rising to a height of 15 or 20 feet, more or less, *Cocos flexuosa* is unique, but is by no means found in such great abundance as *Kentias*. Extremely elegant when 10 to 15 feet high is the distinct and pleasing kind *Dæmonorops palembanicus*. For massiveness in a large state or small, the Fan Palm, *Latania borbonica*, has no equal, and has to be grown in hundreds of thousands to meet the demand. The leaves are broad, bright, shining green, and form the foundation of millions of "Fans," which are dressed to taste. There is also a soft yellow-leaved variety, though still comparatively scarce, which associates effectively with other kinds.

The demand for Fan Palms for ordinary room decoration is enormous, the plants ranging from 18 inches to 2 feet high. But most in demand of all, as what may be termed a domestic Palm—seen almost everywhere, on street barrows and in the homes of the multitude—is the previously mentioned *Kentia Belmoreana*. The extent of glass ranges devoted to the raising of plants of this popular species is astonishing. It would be a task to count the plants in one establishment, such as Mr. Thomas Rochford's, for example, where there can scarcely be less than a million. Hundreds of thousands of plants are sold for a shilling each, but the price, of course, varies with the size.

Equally useful, hardy, and easy to manage as a room Palm, also most elegant, is *Phoenix rupicola*. This species, though far less plentiful than the preceding, and therefore not obtainable at equal prices, are raised in large numbers to meet an ever growing demand. Plants, if properly attended to, will remain healthy and ornamental in an ordinary living room for years. One could be specified which has passed through ten summers and winters in a dwelling in the suburbs of London. Though a native of India this Palm is proving surprisingly hardy, though less so than its congener from the Cape of Good Hope, *Phoenix reclinata*, of which a plant is now healthy in the position it has occupied in a room for twenty years.

As elegant table Palms, and employed as such in pots varying from 3 to 5 inches in diameter, the extremely slender *Cocos Weddelliana* from South America is the most extensively provided. The leaves are almost of grass-like elegance, yet stout and persistent, and rich glossy green. It has been a favourite for years, as it will be for years to come. Almost equally slender, dwarfer, and hardier, is a small Brazilian species, *Geonoma gracilis*. It is, in fact, what its name implies, one of the most graceful of all, and its production seems only to be limited by the supply of seed obtainable.

Practically all Palms are raised from seeds sown in warm structures. Being monocotyledons, the first growths are grass-like, the natural character developing with age. Until comparatively recent years almost the whole of the Palms sold in England were raised on the Continent, chiefly in Belgium. The importation of plants into England was continuous. The times have changed. Not only can all the millions of Palms required in this country be raised in it, grown as well, and sold as cheaply as plants raised elsewhere, but many thousands are exported to other lands. By their decoration with home-grown plants ocean steamers became floating advertisements. British enterprise did the rest, and England was made a great nursery of Palms.—A BRITISHER.



WEATHER IN LONDON.—Though we have had a fair amount of sunshine during the past few days, we have also had a good proportion of rain. On almost every day there have been more or less heavy showers, especially on Thursday, Friday, and Sunday. On Monday it was fine, but the sun only shone brightly at rare intervals. On Tuesday there were occasional showers, but on Wednesday it was fine.

— WEATHER IN THE NORTH.—Very heavy rains fell on the 3rd and 4th; since then the weather has been generally seasonable, and some days particularly fine, Saturday and Sunday being delightfully pleasant, but somewhat colder in the evenings. Monday, also fine, closed with a coldish easterly wind, which continued on Tuesday morning.—B. D., S. Perthshire.

— CAMPANULA ISOPHYLLA ALBA.—This plant is excellent for hanging baskets and to grow in pots for standing in front of stages. The flowers, which are white, are produced in great profusion from the extremities of the drooping shoots. The blooms last a considerable time. As the flowers fade pick them off, which will enhance the appearance of the plants, and prolong the display.—E. D. S.

— ISLE OF WIGHT.—After the recent rains vegetation in all parts of the Island has moved with great rapidity. This morning (May 7th) I received from a Yarmouth friend a sample of new Potatoes (*Sharpe's Victor*) dug outside. On a south border, or under favoured conditions, early Potatoes can be had; but for those in the open there is still a danger of "Jack Frost."—S. H.

— EARLY LAXTON POTATO.—This variety is largely grown for first early cropping on a south border at Coombe Court. Mr. Springthorpe speaks of it in warm terms. Those who remember the remarkable tuber crops produced from its short sturdy tips in two successive trials at Chiswick a few years since, can easily understand this appreciation. But it is surprising all the same to find how little the variety is either known or grown; yet it promised to make one of the earliest tuberizing, dwarfest topped, white flattish Potatoes in commerce. A large grower at Mitcham used to have it in great quantity, and spoke of it in high terms. I should regard it as one of the very best for either pot or frame culture to be found. All the same, that may not have been general experience. With all these very precocious Potatoes so much depends on how the seed tubers are wintered.—WANDERER.

— PRIMROSES CHANGING COLOUR.—Is it really a fact that wild Primroses do change colour? Is it not much more probable that flowers have become fertilised with pollen carried in the air, or by some insect, from flowers of garden Polyanthus or Primroses; that seed has ripened and been shed, then has grown and produced seedling plants, the flowers of which are coloured, or rather discoloured? The Primrose does not naturally cast its seed wide. Rather because of the habit of contraction found in the stems, the seed vessels, before the seed is ripe, curl down close under the leafage. Some manage to grow, and the seedlings come up, perhaps, in doing so, crowding out the old plants, and thus young plants take the place of old ones unsuspectingly. I have never seen a case in which the original wild Primrose plant has changed the colour of its flowers, but seedlings in gardens constantly do so.—A. D.

— STRAWBERRY ROYAL SOVEREIGN.—Mr. Springthorpe of Coombe Court, Kingston Hill, rather reminds me of the famous individual who appears so frequently in certain soap advertisements. Our gardener friend, since he has begun to grow Royal Sovereign in pots for forcing, grows no other. What high tribute to the merits of this comparatively new variety is this! The old Biblical saying is in its case materially reversed, for blessed is the variety when all men speak well of it, and that is certainly the case with Royal Sovereign. The variety sets well, carries and swells its fruit well, gives rich colour, and, especially when finished in cool houses and with ample ventilation, delicious flavour. The crop I saw the other day from plants producing single crowns only was a first-rate one, and if grown for market should be a good paying one. Reference to the market value of the fruits leads naturally to the question of value the variety may have been to its raiser, the late Mr. Laxton. It has proved to be one of the finest and most valuable Strawberries ever introduced.—WANDERER.

— **EXTENSION OF PREMISES.**—Messrs. B. S. Williams & Son, of Upper Holloway, have acquired extensive grounds, forming part of the Manor Farm, Regent's Park Road, Finchley, for the purpose of further extending their business, and growing hardy trees, shrubs, general nursery stock, and plants under glass.

— **ROYAL METEOROLOGICAL SOCIETY.**—At the ordinary meeting of the Society, to be held in the rooms of the Royal Astronomical Society, in the Quadrangle of Burlington House, Piccadilly, W., on Wednesday, the 18th inst., at 4.30 P.M., the following papers will be read:—"The Frequency of Rainy Days in the British Islands," by Robert H. Scott, M.A., F.R.S.; "The Abnormal Weather of January, 1898," by Frederick J. Brodie, F.R.Met.Soc.

— **WOLVERHAMPTON HORTICULTURAL CLUB.**—There was a numerously attended fortnightly meeting of this enterprising Society on the 3rd inst., Mr. Simpson presiding, when Mr. James Deans (Messrs. John Pope & Son, Birmingham) gave a most interesting lecture on the history and culture of the Iris, illustrated by coloured plates and drawings of several of the choicer species and varieties. Unfortunately it was too early in the season for a display of cut specimens, excepting, perhaps, the few earlier blooming kinds. The lecture was listened to with close attention, and in the ensuing discussion one of the speakers humourously remarked that one or two sceptical acquaintances of the fraternity had remarked to him that they did not think it worth while to be at the trouble of going to listen to a description of "blue Flags," but had they come no doubt they would have been convinced of the contrary, and have cause to admire and reflect.—W. G.

— **DEATH OF MR. A. SIMPSON.**—On the 4th inst. the death occurred of a well known citizen of York—viz., Mr. A. Simpson, head of the firm of Messrs. A. Simpson & Sons, Heworth Nurseries, of whom it may be said that from small beginnings he had made for himself a prominent position amongst the nurserymen of the county. He was associated with the Ancient Society of York Florists, amongst whom (as well as a wide circle of acquaintances) he was highly respected. His connection with the Society extended from the year 1868, and for a great part of the time he served on the Committee, having filled the office of Steward three years, and in 1894 occupied the position of Chairman of the Executive, the most successful (financially) year in the Society's annals. He was a prominent figure at the York Chrysanthemum shows since their beginning, having charge of the arrangements for the vegetable exhibits, no light duty, as those who know the quantity to deal with could testify. The more immediate cause of the end was a paralytic seizure. The interment took place on the 7th inst. at York Cemetery, being preceded by a service at St. Thomas' Church, the chaplain (Rev. H. Vyvyan) taking a part, many of the deceased's colleagues being present. He was in the sixty-eighth year of his age, and leaves a widow, three sons and two daughters.—J. L.

— **WINTER-FLOWERING PELARGONIUMS.**—In your note at page 388 you say, "It is comparatively seldom one sees a really first-class collection." Doubtless you were here referring more to culture and blooming than to mere variety. Seeing this note induced me to refer to Mr. Parker's paper, in which he gives what can be described as an exceedingly restricted list of varieties, whether double or single, suitable for winter culture. At Swanley, where may always in midwinter be seen a superb show of single and double Pelargoniums in bloom, and really a marvellous sight, not only are all the summer blooming varieties practically reproduced, but there are scores of them. Really, I have seldom found any good flowering summer variety that would not under ordinary culture flower equally well in the winter. It is needful to say so much to disabuse minds of a popular error. Then your mention of the comparative scarcity of winter-flowering collections naturally turned my thoughts to the singularly beautiful one which Mr. Salter provides for his employer, Mr. Haywood, at Woodhatch, Reigate, every winter. A span house is devoted entirely to these Zonal Pelargoniums, all single, and the sight of brilliant floral colouring to be seen is one calculated to stagger and surprise anyone. I have often marvelled that similar beautiful shows were not common. Now I noted last November the best varieties in great variety of colour at Woodhatch. There are two dozen recorded, and all different from any mentioned by Mr. Parker. Richer colours, finer pips, more luxuriant florescence no other varieties could excel. If the plants could have been carted to the Drill Hall they would have made the sensation of the season. All were in 6-inch pots; all from cuttings made at the end of the previous January, grown, pinched from time to time, stood outdoors to harden, ceasing pinching end of August, plants got under glass in September, then allowed to come away and bloom as I saw them.—VISITOR.

— **TOMATOES FOR PLANTING OUT.**—Tomatoes in 5 or 6-inch pots for outdoor culture must be kept in cool airy positions near the glass, so as to insure them being kept sturdy.—E.

— **PRICKING OUT HALF-HARDY ANNUALS.**—To secure good plants at bedding-out time which will give the best results it is necessary that seedlings which may be crowded in seed pots or boxes be transplanted in fresh soil in a frame or boxes. Asters, Stocks, Marigolds, Scabious, Carnations, Zinnias, Salpiglossis, Phlox Drummondii should receive this attention.—E. S.

— **PONTEDERIA CRASSIPES.**—This plant flowered last autumn in the Lily tank at the Oxford Botanic Garden, and now again its flowers are displayed therein. Probably only a limited number of those who have cultivated this plant have ever succeeded in flowering it, so that the circumstance of its repeated blooming at Oxford at so short an interval, and thus early in the season, would appear to be deserving of recording in the Journal.—J. E. J.

— **ISLE OF WIGHT ROSE SOCIETY.**—At the annual meeting of the above Society recently held at Newport, and presided over by Sir Barrington Simeon, Bart., M.P., the Financial Secretary stated that the total receipts for 1897 were £71 15s. 11d., and the expenditure £59 3s. 3d., leaving a credit balance of £12 12s. 8d. It was decided to hold this year's show at Carisbrooke Castle (by permission of H.R.H. Princess Henry of Battenberg) on June 16th. Sir Barrington Simeon was unanimously re-elected President of the Society.

— **APRIL WEATHER AT HODSOCK PRIORY.**—Mean temperature of the month, 46.9°. Maximum in the screen, 66.7° on the 8th; minimum in screen, 25.5° on the 5th; minimum on the grass, 15.1° on the 5th. Number of frosts in the shade, six; on the grass, eighteen. Sunshine 116 hours, or 28 per cent. of the possible duration. Rainfall, 2.50 inches; rain fell on thirteen days; maximum fall, 1.22 on the 11th. Rainfall from January 1st 5.12, diff. from average 1.73. A mild month, with heavy fall of rain on Easter Monday. The last few days wet.—J. MALLENDER.

— **YELLOW POLYANTHUSES.**—I notice that the yellow variety referred to as John Wilkinson is by "N. N." termed a Primrose. Mr. Arnott gives it its proper designation—Polyanthus. It is a pity everyone does not understand the undoubted distinctions that exist between one and another. A true good yellow Primrose I have never seen. Even the double yellows are pale creamy things, falsely called yellow; yet I have raised scores of thousands from seed of true Primroses of all the colours I could obtain. Probably if some readers had had my experience of yellow Polyanthus they would make less fuss over any variety. They are common enough, although now I never see such grand orange yellow hose-in-hose Polyanthus as I used to have at Bedford. But of ordinary yellows of the finest form, richest colour, and thrum-eyed, too, there are plenty. I saw great masses of seedlings the other day at Long Ditton, from which I could have selected scores of splendid yellows, and I longed to select the wheat from the tares, but it was not my business. I should have liked "N. N." to have seen the grand show of these Polyanthus I saw the other day at Farnham.—A. D.

— **BLACKS IN TOMATOES.**—If by this term "N. N." means the black blotches so commonly found on and about the flower points of Tomatoes, I fear his suggestion as to the cause hardly meets the case. How frequently does it happen that this black spot or blotch is seen on the under sides of the fruit to which the sun's rays hardly get access. An odd circumstance I noticed in looking through some Tomato houses recently was that whilst spot was very rare on the red varieties, it was so common on a yellow variety of high repute that few fruits were left sound. But the disease no doubt begins in the flower, where, in moisture probably, the fungus gets possession, and proceeds, after destroying the blooms, to extend to the fruit. That seems to be the only explanation of its common appearance near or exactly on the flower points of the fruits. It is a disease which once it is found seems to admit of no healing. Nothing remains but to pull the fruits and to destroy them. If any remedy is to be found at all it would seem to be needful of application whilst the bloom is open. Possibly dustings of sulphur, or creating sulphur fumes by coating the pipes with sulphur paste or similar dressing, may do good. In any case there is much need for a more complete elucidation of the true nature of the disease and its remedies, if any are to be found. Sprayings of Bordeaux mixture are easily advised, but because so dangerous on Tomatoes, not desirable remedies. The production of sulphur vapour may be much less so. One thing is very certain in relation to Tomatoes under glass; it is that if warmth is maintained, they can hardly have too much ventilation.—D.

— **LOADS OF POTATOES.**—Potatoes are sold by the load throughout the West Riding of Yorkshire. A load weighs 18 stones (14 lbs. to the stone); 9 loads to the ton.—*S. Yorks.*

— **PROGRESS.**—We had a pleasant surprise by post this morning. An old friend in a new form—or, rather, in a more approachable form. Paper knives are always to hand when wanted, and the leaves of the *Journal* are so tantalising—the most interesting part inaccessible. But now that day is over, and the good old paper, with its charming contents, is neat and trim as a bevelled-edged book. Perhaps this is a small matter; but no matter should be small which so much enhances the comfort of the reader.—*THE MISSUS.*

— **DWARF BEAN SION HOUSE.**—Until this spring I have not proved this old variety, and feel sure there are many beside myself unacquainted with its merits. The newer hybrid kinds now so universally chosen have given the older sorts a poor place, but the variety under notice, according to my experience, deserves special mention. It has been equal to any other I have grown in pots, and set its crop with greater freedom than some others. The pods, too, are of good size and colour, and the habit of the plants very compact. It certainly is a variety that might give a good account of itself if growers gave it an opportunity.—*R. A.*

— **TARRAGON.**—The list of herbs given by "E." page 369, does not include this, and as it is very rarely offered by seedsmen; this, perhaps, explains the reason. I have only found it offered by one seedsman, and my present stock was obtained in this way. True, Tarragon can be divided easily, and is of free growth, but cases sometimes arise when seeds would be invaluable. In severe weather it has a risk of being destroyed, and herein lies the value of seeds. It is customary, where this herb is much used, to lift some roots in the autumn, place them in boxes of soil under glass. These, in spring, can be used in renewing the plantation.—*WILTS.*

— **VINE MILDEW.**—I observe Mr. D. Buchanan's practical theory respecting cold draughts being a prolific means for the production of mildew, referred to on page 386, and of the wholesome dread some cultivators have of this insidious affection, red spider included also. I should like to say in corroboration that I had a forcible illustration when on a visit to Drayton Manor, Tamworth, the fine old seat of Sir Robert Peel, Bart., one day in September last, of a simple means adopted by Mr. James Mack, the then able and persevering gardener, to preclude the admission of air through the front ventilators or sashes of the well-cropped vineries, so great was his horror of the presence especially of mildew. The means in question was simply a thick lining of lawn mowings or other similar material banked against the sashes outside, thus forming a complete barrier to the ingress of cold air, and on no occasion during the season of growth was air admitted artificially excepting through the top ventilators. Thus by the means indicated the Vines had enjoyed an immunity from mildew. Furthermore, the almost total, if not quite, absence of red spider characterised the healthy condition of the Vines at the period of my visit. I may add that the Peach houses at Drayton Manor bore evidence of the thoroughly practical and intelligent system adopted in the management thereof, as well as the creditable state of the gardens and grounds altogether.—*W. G., Birmingham.*

— **HORTICULTURE AND COOKERY.**—The Dean of Rochester has written on this subject as follows in reference to a book which we have not seen:—"The subjects of horticulture and cookery are of great national, social, and moral importance. We would magnify their influence wherever the opportunity presents itself, and to the full extent which the circumstances will allow among all classes of the community. We would induce the farmer to renovate those miserable collections of dead and dying trees which in so many instances he calls his orchard. We would have him restore the old waste places which he calls his garden, and would give to every cottager who desires to have it a sufficient space for vegetables, fruit, and flowers, instruct him in the selection of the fittest, and teach his wife to cook. If a man does not find happiness at home he will seek it elsewhere in vain; but when, after his day's work is done, you refresh his eyes and his palate with the result of his own handiwork, you do much to make him satisfied with his surroundings." "No more excellent work is being done by our County Councils than the establishment of school gardens at selected centres to be cultivated in plots by boys of thirteen years of age and upwards under a local instructor; the encouragement of cottage gardening and allotments by the lectures of qualified persons, by prizes awarded to successful culture, and by the organisation, as at Maidstone, of schools of cookery."

— **FOOD OF PLANTS.**—The food of plants which is derived from the soil must be soluble either in water or such weak acids as are excreted by root hairs.—*D.*

— **RHODODENDRON GRIFFITHIANUM.**—This species ranks high in a genus which is remarkable for the large number of gorgeous-flowered species it contains. In the temperate house at Kew a large plant is now to be seen in full flower. The blossoms are produced in loose spreading trusses, averaging nine flowers to each truss. They are white, with a touch of pink on the outside, 5 inches across by 4 in depth. When not in flower, the size of the deep green foliage makes it a striking plant, the leaves often being 9 inches or more long, by 3 inches wide. In some gardens it is met with under the name of *R. Aucklandi*, and it is figured in "*Rhod. of the Sikkim Himalayas*," t. ii., under that name. For a large cool house few plants, if any, are more striking than this and other Himalayan *Rhododendrons*. Among other species and varieties flowering in the temperate house at Kew are *R. arboreum*, *Nuttalli*, *ciliatum*, *kewense*, *Edgeworthi*.—*D. K.*

— **SPINACH BEET.**—As a substitute for the ordinary Spinach this is very useful. Usually in dry summers there is a difficulty in keeping up a supply of Spinach, for the summer varieties are prone to run to seed quickly, and it is not always easy even to get the seed to germinate unless special attention can be paid to watering. In severe winters, too, Spinach is brought to a standstill, and the supply cut off for a time. The Spinach Beet variety is quicker in responding to a genial change of weather than the common Spinach, hence its value. In some places it is not accepted in the kitchen at all, in others only when no other is available. The present is a very good time to sow seed for securing a supply lasting until April in next year, one sowing from this date sufficing. Ground lately occupied with winter greens or Broccoli, lightly manured and dug deeply, will grow as luxuriant a crop as anything the gardener has to produce, it seemingly having no insect enemies. A light sprinkling of salt at the time of sowing or later is beneficial on light soils.—*W. S., Wilts.*

— **RHODODENDRON THOMSONI.**—Sir J. D. Hooker speaks in high terms of the beauty of this species—in the description accompanying fig. 12 in "*Rhododendrons of the Sikkim Himalayas*"—as he found it growing at an elevation of from 10 to 13,000 feet. At the present time several plants are to be seen in flower in the *Rhododendron* dell at Kew, where they form conspicuous objects among their surrounding neighbours. The flowers vary a little in size and shape, the average size being 2 inches long by 2½ across the mouth. They are produced in loose heads of eight or ten together, and are very richly coloured, being deep blood red, with a glossy or waxy surface. It has been used for hybridising, and several very good varieties are the result; the chief difference between these hybrids and ordinary garden varieties being in the looser heads, more tubular flowers, and the thicker or more waxy texture of the blossoms. In gardens where *Rhododendrons* are made a feature, as many species as are hardy enough for the district should be grown, as with very few exceptions they are showy and interesting.—*D.*

— **THE HORTICULTURAL CLUB.**—The Hotel Windsor was upon last Tuesday evening the scene of quite an exceptional gathering of the members of the Horticultural Club. All were present, saving only those who were unavoidably prevented by illness or absence from home. The occasion was the celebration of the eightieth birthday of the Secretary and founder, the Rev. H. H. D'Ombrian. After having given the usual loyal toasts, Sir John Llewellyn, Bart., rose and proposed the toast of the evening. He alluded in feeling terms to the great age and long service to horticulture of the Secretary. No one, he said, ever found fault with a clergyman for cultivating the hobby of horticulture. It was a refining pursuit, in every way consistent with his humanising calling, and tended to brighten the lot of those within his *cure*. Money, he said, was not everything, but it was in many cases an evidence of active esteem, and all the members had therefore united in contributing each an equal sum for a birthday gift. This was enclosed in a purse expressly worked for the Secretary by a lady, and which he had unfeigned pleasure in presenting to Mr. D'Ombrian. Mr. D'Ombrian in replying was visibly moved. He said that he recognised with pride the unexampled gathering. He saw before him many faces he had known for more than thirty years, and if there were some old faces missing, their places were now worthily occupied by those of their descendants. He lived in two worlds, his pastoral and his horticultural, but between the two he obtained nothing but refreshment. While not anticipating an indefinite future, he still hoped that he might be spared to celebrate many happy meetings with those he was addressing. Mr. Monro having spoken with satisfaction of the lightness of his labours in canvassing the members, and of the unanimity and alacrity of their replies, the company proceeded to an informal entertainment for the remainder of the evening.

DIPLADENIAS AND THEIR CULTURE.

(Concluded from page 385.)

WATERING.

NEVER water Dipladenias until the soil gets somewhat dry. They do not need heavy supplies at any time, yet when growing a due amount at each watering to moisten the soil through to the drainage. During the winter they must be kept moderately dry at the roots, but the "dry as dust" system hardly answers. Water must be given very carefully at starting, root action only needing moderate moisture, and when in free growth afford supplies as necessary, more being required when the flowers are developing. After flowering, or during the latter part of September and in October, merely afford sufficient to keep the leaves fresh, and gradually reduce the amount, very little being needed after that month and up to February.

TEMPERATURE AND LIGHT.

Dipladenias are hothouse plants. It is useless to attempt to grow them in an intermediate house or cool stove. Even in winter they require warmth—60° to 65° at night, and from starting in the early spring 70° to 75° should be the minimum by night and in the daytime in all but very dull weather and on severe frosty nights. Relatively low night temperatures, however, do no harm, provided the days are bright and the heat mounts up to 85° or 90°, or more. This temperature they enjoy from sun heat, and that they mostly get in stoves from April to September inclusive.

Rough and frosted plate glass roofs do not suit Dipladenias, and though a slight "summer cloud" shading does no harm after flowering begins, the less of it the better, aiming more at a diffusion than obstruction of the sun's rays. They must have light to flower freely, making stout, short-jointed, hard wood. After August the more glare of sun the better, for the main growths cannot be too thoroughly ripened; even trellis plants are better loosened from the conical or globular shapes, and the shoots spread out to the late summer and autumn sun. It enables the plants to store matter for the succeeding year's growth, and by this procedure a good start will be secured.

PRUNING.

The flowers are produced on the young wood of the current year, and in most profusion at the latter part of the summer. Overcrowding is a great evil, therefore train so that every shoot has its fair share of light, rubbing off weakly growths, for they do nothing but rob the vigorous and deprive them of both nourishment and light. Stopping must not be practised, except for special purposes, but keep the growths sturdy by plenty of space and full exposure. After flowering, thin out the wood well, cutting away nearly all that of the current year to let the sun into the plants. In the late winter or early spring, say February, cut back the main shoots to a few buds, spurring them in like Vines, always making a reservation of main shoots required for covering the trellis, and these hard and ripe in the wood.

STARTING.

Let the plants move before attempting any disturbance of the roots, then turn them out of the pots, remove as much of the old soil as desirable, reducing the ball about half, and repot, pressing the soil moderately. Water very carefully, and sprinkle the plants occasionally. This will bring them on better than waterings at the roots, but when they get hold of the new soil they will need more copious supplies. Avoid, however, making the soil wet, either by sprinkling or watering too much. Young plants may be given a shift in the early summer, but avoid overpotting at any time, though a rather large size of pot will be required for large trellis plants. In repotting these be careful to remove the loose soil only, as the plants are rather impatient of much root interference, yet give some soil annually, and always see that the drainage is perfect.

The plants appreciate frequent syringings, provided they are given in the early part of fine afternoons, never excessively, and not so that the water will hang on the foliage for a considerable time. The syringing must not be practised over the flowers, but damping in the morning and early afternoon proves advantageous. In the early spring and summer months a brisk moist heat is necessary to bring the plants along; they enjoy moisture better when arising from a large extent of damped surface than a deluging of the growth.

Dipladenias require a fair share of air, not a great amount at one time and none at another, but some each day of their growth, to insure a change of atmosphere. The early opening and the early closing system suits Dipladenias to perfection, the bottled up sun heat doing much more good than the stuffy heat from hot-water pipes.

PESTS.

Mealy bug likes Dipladenias, but there is no need to have it if the house be vapourised with nicotine. This also acts well against scale, as the young are just as easily killed as green fly. Thrips and red spider also like these plants; but they cannot make great headway

where due attention is paid to adequate supplies of moisture and judicious syringings. Vapourisation with nicotine kills thrips, only practise it often enough, and red spider does not like it. By those means the pests can be kept under, and they must, for unless the plants are kept clean and healthy they cannot be expected to thrive. Winter dressings are useful, and touching up parts infested with mealy bug and scale with methylated spirit, applying by means of a small brush, are not overwhelming processes, and these little timely attentions give plants much of their after beauty, as they flower in measure of their cleanliness, and are appreciated accordingly.

SPECIES OR VARIETIES.

D. amabilis.—Leaves oblong-acute, shortly stalked. Flowers rosy or purplish crimson, 4 to 5 inches in diameter; petals round and stiff, borne in clusters from May to October. A hybrid between *D. crassinode* and *D. splendens*.

D. amena.—Leaves oblong-acuminate. Flowers pink, suffused with rose; petals round, stiff, and not reflexed. Free blooming, and better than *D. splendens*, which it somewhat resembles, occasionally being as pale in colour. A garden hybrid, with exceptionally good foliage.

D. boliviensis.—Leaves oblong-acuminate. Flowers white, with a golden yellow throat, about 2 inches across, borne in sub-terminal or axillary racemes of three or four; stems slender. A pretty, small-growing species. Bolivia, 1866.

D. Brearleyana.—Leaves opposite, oblong, acute, dark green. Flowers (opening pink) rich crimson, very large, freely produced from May to October, and borne well above the foliage. One of the finest varieties. Garden hybrid.

D. crassinode.—Leaves oblong lanceolate. Flowers rose coloured, unapproached for loveliness of shade, but superseded by the hybrids. Rio Janeiro.

D. hybrida.—Leaves large, stout, bright green. Flowers flaming crimson red, freely produced; very beautiful. Garden hybrid.

D. insignis.—Leaves or foliage very strong and growth stout. Flowers rosy purple, striking. Garden hybrid.

D. Lady Louisa Egerton.—Leaves long and lanceolate, rough and leathery. Flowers white, suffused with pink, eye rayed with a deeper shade, round, of great substance, and 6 inches or more in diameter. Garden hybrid.

D. nobilis.—Free growing. Flowers orange red to rosy purple, large, handsome. Garden variety.

D. Regina.—Growth neat, early flowering. Flowers blush at first changing to flesh colour, with rose suffused on throat. Garden hybrid.

D. rosacea.—Flowers rosy pink, suffused and bordered with a deeper shade; throat yellow, with a rose ring at the mouth. Garden variety.

D. (Echites) splendens.—Flowers white, suffused with pink, produced on spikes successively for months. Foliage broad, and shoots stout. Organ Mountains.

D. s. profusa.—Leaves oblong-acuminate. Flowers (fig. 77) carmine, 5 inches in diameter, and borne in bunches from the axils of the leaves. Garden hybrid.

D. s. Williamsi.—Flowers similar to the species, but with a deep pink throat; free flowering and a great improvement on the species. Garden variety.

D. Thomas Speed.—Flowers large; petals broad, round and of great substance, rich rosy crimson, rayed blush white, with a golden eye flaked with red. Growth free and floriferous.—G. ABBEY.

VEGETABLES FOR HOME AND EXHIBITION.

SEAKALE.

A GARDEN without Seakale would be deficient in a most important crop. Important in many ways—the chief one being that it is a vegetable that supplies a welcome and radical change to the menu. It is the forerunner of a new order of things, and the advent of Seakale in the kitchen paves the way for a line of varied produce continuing through the summer, and none is more appreciated than the first dish of tender forced Seakale. The date of this depends largely on the facilities for forcing, and the supply of roots suitable for the purpose. The demand for forced Seakale varies likewise. This winter there has been no lack of vegetables, for which the mildness of the season is accountable. During severe winters, however, the demand for Seakale exceeds the supply.

There are various ways adopted for forcing this useful product; but, in the first place, let us glance at the culture of it. Average garden soil is suitable for Seakale, and good manure from the farmyard suits it admirably. Frequently one sees the Kale bed in an out-of-the-way shaded corner of the garden, so placed that it may be easily protected prior to forcing; but it is far better to grow it fully exposed to the sunshine. A commencement must be made either by propagating

from seeds or planting matured roots. The latter course is advised, as a saving of time and labour; but if the former is adopted, seeds may be sown in April, in drills about a foot apart, and when the roots have attained a fairly good size, they are all the better for transplanting. The drawback to raising Kale from seed is that a year must be sacrificed,

will be necessary to thoroughly prepare the ground, as Seakale is, more or less, a permanent crop. If the subsoil is good the ground may be trenched a couple of spits deep, with good manure worked in the bottom and between the spits. Methods of planting must be ruled by the intended means of forcing. Supposing the Kale is to be



FIG. 77.—*DIPLADENIA SPLENDENS PROFUSA*.

which is not necessary when growing from roots. It is advisable, whether transplanting or leaving the Kale to mature where it is sown, to allow ample room between the roots, by which the crowns will be benefited.

Before planting roots, which operation may be performed in favourable weather any time between the late autumn and spring, it

blanched on the ground, then there must be room left for getting between and round the crowns, especially as the plants when established cover a wide area. Square beds about 4 yards each way, with a pathway round, are convenient, and will accommodate three rows of plants at even distances. The advantage of planting in square beds is that leaves and other heating material used for blanching may

be utilised to greater advantage, and if necessary be removed from one square to another in the event of succession. It is advisable to cut off the prominent buds on each crown before planting, as they will throw flower stems. The roots should be covered with 2 or 3 inches of soil, and be trodden in firmly as the operation proceeds, and for the first season a salad or other shallow-rooting crop may be grown between the crowns.

Free use of the hoe is necessary during the summer, and in dry weather an occasional feeding with liquid manure will assist in the building up of the crowns. As the foliage decays it should be removed, and the surface soil be lightly forked over, finishing off with a mulching of good manure. The crowns are now practically exposed, and, no matter what is the proposed method of forcing, some means of protection during severe weather is advisable. Rough straw from the stable, or leaves, or a mixture of the two, will be suitable for the purpose if heaped over the roots not otherwise protected by pots. We will suppose that the Kale is to be blanched on the ground, and forced so far as means will allow. Seakale pots with moveable tops are the readiest means of protection and blanching, but in their absence large drain-pipes, flower pots, and tubs are used. Any such should be placed over the crowns, and the whole covered with litter, and the result will be early growth of superior quality. The arrangements may be such that the Kale comes in successionally, and the period of cutting is lengthened, and this is always preferable to having a quantity in at once and then a dearth.

Supposing pots are placed over a portion of the crowns, the remainder having only the protection of leaves. Fermenting material, in the shape of littersy stable manure, may be heaped round the pots, and this will assist in forcing the growth. As the Kale is cut the pots may be removed further along, and the process of covering be continued. Though naturally later, Seakale blanched in this way on the ground is superior in quality than when subjected to hard forcing indoors. When the crop is completed remove the leaves and litter from the ground and apply a dressing of manure, which should be dug in round the plants. A number of growths will be emitted from below where the Kale was cut, and if all are left several weak shoots are the result. To obviate this the buds should be thinned to two or three of the best, which will be the crowns for the future.

For early supplies and quick forcing the Mushroom house is the favoured resort, than which there is no better place, as there are both the necessary heat for pushing growth and the darkness for blanching. The best flavoured Seakale, however, is that which is forced gently, as when grown in a high temperature the growth is thin and weakly, beside being destitute of flavour. No Seakale is equal to that grown without artificial heat, therefore the more gentle the forcing process the nearer perfection will be the produce. Decayed leaf mould, spent manure, or old potting soil are suitable for surrounding the roots, the crowns of which should be left exposed. One good watering is generally sufficient, after which the natural moisture of the Mushroom house dispenses with further supplies of liquid. Where Mushroom houses are not available any place of suitable temperature will answer the purpose, provided light is entirely excluded. Roots taken up and forced are of little use afterwards, and may be dispensed with, but forcing on the ground as suggested above may go on for an unlimited period. The best Seakale for table is stout, fleshy, and fresh. Slowly forced Kale is more likely to possess these characteristics than when subjected to excessive heat, though when it is desired to get it as early as possible hard forcing must be resorted to. In such cases Kale should be cut and sent direct to the kitchen, in order to preserve the crispness, which changes to flabbiness if allowed to lie long after cutting.—GROWER AND JUDGE.

POLYANTHUSES.—I was so much disappointed with the rough coarse aspect of the border Polyanthuses staged at the Drill Hall on the 26th, that I gladly accepted an invite from Mr. S. Mortimer to run down and see his breadth of these beautiful spring flowers again, as I did last year. To one who appreciates these Polyanthuses beyond all other spring flowers, it was a treat to look upon what is, I think, one of the finest collections in the kingdom. Most of the plants are three years old, and many of them are from 15 to 18 inches across, truly wonderful clumps! There were altogether some 1800 or 2000, perhaps more; planted thinly on the sandy soil of Rowledge, where they thrive luxuriantly. I noticed that about 2000 seedlings from an autumn sowing had already been put out for next season's flowering. That is the way to treat these plants. Sow seed thinly in August, let the plants remain in the bed all the winter, and plant out in the middle of April where to bloom. They then get well rooted ere warm weather sets in, and make very fine clumps by next winter. Plants from spring sowings are seldom ready to put out before June, when the weather is often hot and dry. The strain is very fine and varied. Colours vary exceedingly, and are indescribable; but the quality found in the flowers is of the best, far surpassing what is so commonly seen. There is so much room for improvement in common stocks, and so many as we see in gardens and in the markets are so poor in colour and quality, that such a fine strain as I have referred to can hardly be overpraised.—A. D.



KENT COUNTY CHRYSANTHEMUM SHOW.

THIS show, which is annually held in the Rink, near Blackheath Station, is looked upon by many as an index, so far as quality is concerned, of the flowers that are to be shown. Each year a charming display is brought together, cut blooms, both of Japanese and incurved, being invariably of good quality. The eleventh annual exhibition will be held on Wednesday and Thursday, November 2nd and 3rd, 1898, and it is hoped that the status of the Society will be well maintained. Schedules, in which some excellent prizes are offered, are now ready, and may be obtained from the energetic Honorary Secretary, Mr. F. Fox, The Cedars Gardens, Lee, Kent.

SPRING NOTES.

THE French N.C.S., although a young society compared with its English prototype, shows signs of increasing vigour and prosperity. Its journal is a valuable means of disseminating information among those members who live at a distance from the seat of operations, and the last number issued shows that there are now 419 members. The next Conference will be held at Troges on the 5th November.

On the occasion of the Conference at Orleans last November several interesting papers were read, the principal of which have recently been issued in separate form by Mr. O. Doin, publisher, Paris, in a convenient pamphlet of about thirty-six pages. Illustrations accompany these articles, which deal with the following subjects:—"Maladies and Parasites of the Chrysanthemum," by Mons. Chifflet; "The Fertilisation of the Chrysanthemum," by Mons. Gerard; and "The Best Manures and Composts to Use in Chrysanthemum Cultivation," by Mons. H. Fatzer.

The literary work accomplished by some of these Continental Chrysanthemum societies is worthy of remark. Last November the first exhibition of the Amsterdam Chrysanthemum Club was held, and an official catalogue compiled for the use of visitors at a small charge. Mr. J. K. Budde wrote for this work a sketch of the history of the Chrysanthemum, which was followed by a paper on "Cultivation;" the rules of the Club next appear, together with a list of exhibitors, the whole forming a neatly printed pamphlet of fifty-six pages.

The foreign catalogues of novelties are now all to hand, and form, as usual, a goodly pile. The best of all in style is that issued by Mons. Ernest Calvat, who supplies a large double-page phototype illustration of one of his novelties, President Bevan, and a chromo-lithograph of a deep yellow coloured Jap called General Paquie. Mons. Calvat's 1898 novelties comprise thirty-two varieties, which have been awarded seventy-seven first-class certificates or awards of merit. Other competitors for public favour are Messrs. Chantrier, Allemand, de Reydellet, Rozain, Charment, Nonin, Morières, Heraud, Délaux, Lacroix, Bruant, and several others less well known.

A special circular of Italian novelties from Mr. Scalarandis, gardener to the King of Italy, also reminds us of that gentleman's efforts as a recent raiser. Most of his new seedlings have been shown at the leading Continental shows, and appear to be more highly thought of there than they were here when he exhibited a collection at the N.C.S. Jubilee Show in 1896. At Brussels during the past season Mr. Scalarandis was appointed Knight of the Order of the Crown of Belgium, and other distinctions appear to be awaiting him. The movement in Chrysanthemum culture seems to be spreading in Italy, although none of the raisers there seems to have obtained anything that appeals specially to English taste. A few weeks ago an eminent amateur in the north of Italy sent me a large number of photographs for inspection, all newly raised Italian seedlings, but the really promising sorts were certainly in the minority. Judging by the appearance of them they were weakly grown and the centres badly filled.

It is, however, agreeable to be able to record that the Italian growers seem to be in earnest. A circular has just reached me announcing the formation of what they call "La Società Nazionale Italiana di Chrysanthemisti." The Society draws attention to the existence of national societies in England and France, and a provisional committee has been formed to carry out the formation of a society on similar lines so soon as a sufficient number of applications has been received. Amongst others the names of our friend Mr. Briscoe-Ironside and Mr. Scalarandis appear, the latter as President. The headquarters of the Italian N.C.S. are to be at Milan, and the Secretary, Mr. Paolo Radaelli, is a well-known nurseryman and Chrysanthemum grower there.

Although the chances of duplicate names amongst the Continental novelties are somewhat reduced by the action of the French N.C.S. requiring registration, there are still some of the new names that may cause a little confusion by their resemblance to others already in existence, and others are open to the objection of great length, such, for instance, as

Madame la Douavrière Lampsius van den Velden, Souvenir de l'Exposition du Havre, Avenir de la S.C.D.N., which being fully expressed is Avenir de la Société des Chrysanthémistes du Nord.

From America there is not much to chronicle at present. Mr. T. H. Spaulding's familiar little square catalogue bears a new name, that of George Atkinson as his successor. Mr. Atkinson, it appears, has acted as Mr. Spaulding's manager for the past ten years, and therefore, no doubt, fully knows what is expected of the Chrysanthemum in America and elsewhere. After perusing Continental catalogues it is always refreshing to turn to the American ones. There is a crispness about American nomenclature that cannot fail to be appreciated, and the 1898 American novelties illustrate this fact once more. Avoiding personal names, which will always appear in every raiser's catalogue, Spottswood, Snow Queen, Merry Christmas, Autumn Glory, Boundless Snow, Black Hawk, Quito, and the like may be cited as illustrations.—C. HARMAN PAYNE.

HARDENING BEDDING PLANTS.

ABOUT the end of May or the first week in June is usually a safe and convenient time to begin the important work of bedding out. Two great essentials to success in the matter are to have good plants, and by exposing them freely to all weathers, short of actual frost, to bring them into such a condition by bedding-out time that they may grow with as little check as possible after being planted out. Where plenty of pit room is at command Pelargoniums will have been placed in them during April, and will now only need the lights to be placed on at night whenever there is the slightest danger of frost occurring, or when cold cutting winds prevail.

In nearly all gardens there seems at this time of the year to be a scarcity of cold pits and frames, but it is an easy matter to quickly form rough ones with a few boards, and old lights to cover them, or failing the latter, cross stakes and canvas answer admirably for purposes of protection. Warm positions in front of walls and fences can also be utilised for many of the less tender plants, such as Ivy-leaved Pelargoniums and Lobelias, but even in their case it is necessary to have some means of protection at hand should a sudden frost occur. Some gardeners, I think, make a great mistake in their anxiety to get their whole stock of bedding plants hardened at once, when by following some other course they might often gain a great advantage. Let this serve as an example. If the earliest and best plants are selected for hardening first, the weaker ones will be much benefited by remaining a couple of weeks longer in heat, and as the weather is by that time usually more settled, a week or ten days' exposure in pits renders the plants quite fit for planting out.

It is surprising how much may often be gained by the exercise of a little ingenuity of this description, for attempting to harden a plant before it has been grown to the required size often causes the flower gardener to "run short" of material. As the houses are gradually cleared of Pelargoniums, the space can be utilised for Alternantheras and other tender bedders, which if placed in cold pits ten days before they are wanted for planting out will, if rightly treated, be properly hardened. I have seen tender plants of this description placed in cold pits weeks before they were wanted for bedding out, and when planted by the side of others started much later, and only removed from warm houses a fortnight before being planted in the flower garden, they were a comparative failure, having got into a stunted condition through being placed in cold pits too early. I have always found that with such tender bedders the hardening should be done quickly. Get the plants strong and vigorous before they leave the houses, choose warm weather for transferring them to pits, admit air judiciously for a few days, after that increase the amount each day till full exposure can be safely given, then the results are sure to be satisfactory.

It is a pity that the great value of planting Calceolarias early is not more generally practised, for well hardened plants may be now safely planted out in any part of Britain. I planted some in a very exposed position a fortnight ago, and although we have had 6° of frost since, they are quite uninjured. Early planting enables them to withstand the drought of summer, and to flower grandly throughout the season. If those who fail in getting these showy plants to thrive satisfactorily during the summer would only try early planting, I feel sure they would succeed; but it is of course necessary to plant sturdy specimens which have been fully exposed night and day for the last two weeks.—FLOWER GARDENER.

THE month of May is one of the busiest periods of the year. Thousands of bedding plants during this period requiring special attention, the gardener must be up and doing, so that the wants of each and all may be promptly supplied. Softwooded plants which have been propagated from cuttings inserted in autumn, and potted singly in small pots or spaced out in boxes during March and April, demand now cold frame treatment. If Lobelias or bedding Pelargoniums are allowed to stay in heat when the plants have attained to profitable size they must of necessity become drawn and weakened. This is especially so if to the heat is added shade, which is now becoming dense even in late vineries, where large quantities of bedding plants are often located.

A bed of ashes in a cold frame should be prepared for standing the plants upon, as it is essential that a cool, damp base be provided. The frames must be sufficiently deep to allow of the largest plants receiving

the protection of a glass light both throughout the day and night at first and on specially unfavourable occasions afterwards. If the stems of the plants have become soft, and the leaves thin in texture through remaining beyond their proper time in heat, lessened light, and a moist atmosphere, the too sudden exposure to the outside atmosphere for a length of time will cause the foliage to be discoloured. The growth of the plants will also be checked to a more or less injurious extent. The plants ought to have as much space to stand upon as can be afforded, the plan of placing them close enough to touch each other being usually the best. Further space can be given later if necessary. In a fully exposed frame the light is abundant, and helps materially in hardening the cuticle of the leaves and stems. Arrange the plants so that water may be readily supplied to them.

The watering of bedding plants in frames consumes a large amount of time if the soil in the pots cannot be easily seen. It is much better to water carefully than at haphazard, because some will receive water that may not require it then, while others that do may be overlooked. In sunny, breezy weather, it is not too often to look over the plants twice in the day, morning and evening, and if essential, at noon too.

For the first few days after placing the plants in the frames keep the lights on fairly close, shutting up early so that a good heat may be retained, approximating somewhat to the temperature they may have left. Should the nights be cold cover the lights with mats, but remove these early in the morning. Give air carefully according to the weather, and on calm, warm days, lift off the lights altogether, but replace in the afternoon, though ventilation may be left on until evening. This treatment will gradually and thoroughly inure the plants until they can withstand all but cold, stormy weather, in the day, and frosty nights. After the 24th of May it is safe to expose fully all gradually hardened plants, frosts at nights having, except in very unfavourable positions, ceased to be dangerous.

Frames, after the date above mentioned, then come in handy for the hardening treatment of the really tender bedding plants used in carpet bedding, including Coleuses, Alternantheras, and Mesembryanthemums. They likewise serve to finish off Begonias, Petunias, Iresines, Ageratums, Carnations, and others, also for the pricking out and strengthening of Golden Feather, which does not need such early raising and pricking out which is often accorded to it.

Earlier in the month the strengthening and hardening of all half-hardy annuals should be dealt with, for by the time the frosts are past full exposure may be accorded to them, and they will be all the stronger, as well as better rooted, for the final planting out at the end of the month.—E. D. S.

AUTUMN VERSUS SPRING DIGGING.

It has been well established by scientific experiments and investigations that a considerable loss of the valuable nitrates formed in soils during the summer months takes place during the winter if the ground be unoccupied by a crop. If the soil is loose—i.e., recently stirred or dug—the loss is still greater, for while cultivation in the spring and summer increases the formation of nitrates the reverse is the case when the soil is cold and wet. Theoretically and practically, it is therefore desirable to have all ground occupied with crops of some kind during winter, even if they have to be dug into the soil in the spring to make room for special crops.

This is a little elementary science which may concern beginners to understand, and it is only mentioned here to illustrate the point to be referred to presently. The fact is, there are practical considerations which must influence the time chosen for many gardening operations, and the most important of these are the weather conditions prevailing at the time they are undertaken. In sowing, planting, and digging, whether we are to obtain the best results or not often depends entirely upon the state of the soil, and especially so in the two last-named operations.

There is another matter which must be remembered—namely, labour can often be more conveniently spared in the autumn than in the spring, so that in weighing the respective advantages of the two systems many things require to be kept in view. It is occasionally laid down as a rule admitting no exception that ground must be either cropped in autumn to stand the winter, or digging must be deferred to spring, if soil exhaustion is to be avoided. Like many hard and fast rules, this is open to serious objections, and I will describe one which may not be scientific, but it has a commercial bearing that can be fully appreciated by all who are engaged upon the problem of securing the best possible returns from the least expenditure.

Having in my occupation a large extent of land that is worked almost entirely by manual labour, the autumn and winter enabled me to have a large part of this dug under very favourable conditions. About 2 acres had, however, for several reasons, to be left until the spring, and then we were unable to wait for the rain which has come at last; and the work in consequence had to be performed with the soil in a dry, hard, and most unpromising state. With regard to some soils the dryness would be an advantage, but mine is peculiarly heavy and difficult land, as it is absolutely unworkable when wet, and when dry it is almost like bricks, and scarcely breakable. Still it had to be done, and the result was as follows, judged by the cost alone, though the work was less efficiently executed into the bargain. The autumn digging cost between £3 and £4 per acre, the average being nearly the last-named sum; but our spring work, performed with forks, has cost nearly £6 per acre, and the results were practically identical by piece or day work, and tested with different gangs of men.

Whether the average value of the nitrates washed out of the soil during winter has been determined I do not know—it would, of course, vary greatly according to the mechanical and chemical constitution of the land; but now fertilisers are so moderate in price, it is difficult to see what is gained by the increased expenditure under such circumstances as these detailed here. An additional cost of £2 per acre is a serious item, and though this would not be the same in all cases, yet I know many who have to deal with a similar soil to mine, and who presumably might expect a similar experience.

The benefit arising from having ground cropped during the winter is unquestionable, but as there are few who pay heavy rents near towns, and who have to make a living from the land, that can afford to leave any of it unoccupied for several months at a time, this point does not need to be impressed upon them, nor can many gardeners avoid cropping their ground to the fullest extent; but it sometimes happens that provision has to be made for later crops, or from pressure of other work, something has to be placed on one side. It is, however, a subject for consideration that an actual material saving in expenditure can be effected under some circumstances by autumn digging as opposed to similar work in spring.—A MARKET GROWER.



ODONTOGLOSSUM PESCATOREI DUCHESS OF WESTMINSTER.

THERE are many varieties of *Odontoglossum Pescatorei* extant at the present moment, several of which are very beautiful. There is, however, still room for more, as was proved at the Drill Hall on the 26th ult., when Mr. N. F. Barnes, gardener to the Duke of Westminster, Eaton Hall, Chester, showed *O. P. Duchess of Westminster* (fig. 78, page 413). This form is very handsome, and was the subject of much admiration, and received an award of merit from the Orchid Committee of the Royal Horticultural Society. The shapely flowers are rather over the average size, and are of exceptional substance. The spots on the white ground are of a rich rosy maroon, and are very abundant. The variety is one of the most distinct that has been exhibited.

ODONTOGLOSSUM NÆVIUM MAJUS.

THIS is one of the most beautiful of *Odontoglossums*, the blossom being pure white, closely covered with small blotches of crimson. Although not a difficult plant to grow, it requires care, and should be in a position where it can be closely shaded during the summer months, and where plenty of fresh air will play freely over the foliage. It is not a vigorous rooting plant, and does best in small pans suspended from the roof in the coolest house. Fill these half way up with clear crocks, and use for compost equal parts of peat and moss. Water freely during the summer, and in winter sufficiently to keep the bulbs from shrivelling.

CYMBIDIUM LOWIANUM.

We have a good plant of this species in a 10-inch pot carrying seven spikes, and these are large and contain a number of flowers. I grow this plant in a cool fernery, and the specimen in question is elevated so that one has to look up to the flowers. The spikes are not tied at all, but spread naturally, those now in flower covering an area of nearly 8 feet across. *C. giganteum* is grown the same way, and the difference between plants so grown and others tightly tied up is so marked that tying should never be practised except when room is scarce.

EPIDENDRUMS.

Many of the tall-growing section of *Epidendrums* are now flowering, and are extremely pretty, their one fault being the fact that amateurs with small houses have not the room to grow them. But there are positions even in small houses where the plants may be accommodated. In a cool intermediate house lately I noticed one or two species flowering profusely, trained up under the roof glass, and I can safely recommend those who are short of room to try this plan. The roots of most of these kinds are fairly strong, and like a large pot and rough open compost, plenty of moisture all the year round, and careful attention in the way of keeping down insects.

The deep golden yellow balls of flowers produced by *E. xanthinum* are very beautiful, and show well in company with those of the somewhat weaker *E. radicans*. These are extremely bright and pretty, the scarlet and yellow making a fine contrast. *E. Wallisi* again is a very beautiful species, nearly always in flower, and one of the easiest of all to grow. The flowers are of various shades of yellow and purple, produced two or three together on the top or near the top of the growths. Other good forms in this way are *E. syringothyrsus*, *E. ibaguense*, and the fine hybrid *E. O'Brienianum*.—H. R. R.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—MAY 10TH.

THE display at the Drill Hall on Tuesday last was a comparatively small one, the exhibitors being much less numerous than has become the rule of late. The exhibits for the adjudication of the Floral Committee were bright and interesting, while the few Orchids that were staged were of good average quality. Fruits and vegetables were not by any means abundant. The fact that the Temple Show will be held on the 25th inst. doubtless accounted for some absentees.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with Messrs. G. Bunyard, J. Cheal, J. H. Veitch, G. W. Cummins, M. Gleeson, A. H. Pearson, F. J. Saltmarsh, A. Dean, W. Bates, W. Farr, G. Woodward, G. Wythes, G. Miles, F. Q. Lane, W. Balderson, J. Smith, G. Reynolds, G. Norman, R. Fife, and A. Poupart.

Mr. G. Wythes, gardener to Earl Percy, Syon House, Brentford, showed half a dozen dishes of French Beans grown from seed sown on March 28th. The best variety was Wythes' Imperial Mohawk and Ne Plus Ultra. Mr. Wythes also sent a seedling Lettuce, a Cabbage variety of promise, to be tried at Chiswick, and received a vote of thanks. Mr. W. L. Bastin, gardener to A. Henderson, Esq., Buscot Park, Faringdon, sent two dishes of Strawberry Royal Sovereign. The fruits were of medium size and good shape. Mr. Bastin also sent Melon Buscot Park Hybrid, but it was passed (vote of thanks).

Mr. G. Norman, gardener to the Marquis of Salisbury, Hatfield, exhibited three boxes of Strawberry Royal Sovereign that were probably the finest specimens of the variety that have ever been exhibited. They were of immense size and splendid colour (silver Knightian medal). Mr. W. Taylor, gardener to C. Bayer, Esq., Forest Hill, sent Peach Waterloo from a pot tree (vote of thanks); while Mr. J. Ryder, gardener to the Dowager Countess of Limerick, St. Albans, sent two dishes of Peach Alexander (cultural commendation). Mr. J. Hudson, Gunnersbury House, showed fruits of Cardinal Nectarine from pot trees started on December 2nd. They were of good quality (cultural commendation).

A collection of Radishes was staged from Chiswick that represented various stocks sent for trial by Messrs. Barr & Son, Sutton & Sons, Toogood & Son, Watkins & Simpsons, of which Wood's Frame from the latter firm, Sutton's Forcing White and Red from Messrs. Sutton & Sons, and First of All White and Red from Messrs. Barr & Sons, received awards of merit.

PRIZES FOR FLAVOUR.—The first prize for a dish of Apples was awarded to Mr. R. Bullock, gardener to C. P. Serocold, Esq., Maidenhead, who showed Herefordshire Pearmain; Mr. G. Woodward, Barham Court, taking second place with Calville Rouge. The second prize only was given for Pears, and this to Mr. C. Herrin, Dropmore, for Beurre Bretonneau.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. C. T. Druery, O. Thomas, J. Fraser, R. Dean, G. Stevens, W. Howe, J. Hudson, J. Jennings, T. Peed, H. B. May, J. Fraser (Kew), G. Gordon, J. D. Pawle, C. E. Pearson, C. Jeffries, C. E. Shea, H. J. Cutbush, E. T. Cook, D. B. Crane, T. W. Sanders, H. Turner, C. Blick, C. E. Cant, E. Mawley, and J. Walker.

Messrs. J. Veitch & Sons, Ltd., Chelsea, sent a number of baskets of hardy plants and shrubs, including *Anemone nemorosa alba plena*, *Daphne cneorum major*, *Hydrangea japonica Mariesi*, *H. japonica flore rosea*, *Aubrietia Souvenir de William Ingram*, *Citrus trifoliata*, *Notospartium australis*, *Cytisus Schipkænsis*, *Rubus deliciosus*, and *Sambucus racemosa serratifolia foliis aureis*. The group of miscellaneous flowering and foliage plants from Messrs. W. Cutbush & Sons, Highgate, was varied and handsome. Amongst the most conspicuous were *Erica ventricosa coccinea minor*, *E. v. magnifica*, *E. Cavendishi*, *E. perspicua nana*, varieties of *Azalea mollis*, *Boronia heterophylla*, *Hydrangea Thomas Hogg*, *Carnation Princess May*, *Azalea Vervaeana*, *Wistaria sinensis*, with Palms, Ferns, and others (silver Banksian medal).

The plants of *Azalea indica* from Mr. Charles Turner, Royal Nurseries, Slough, though small, were splendidly flowered, and comprised new varieties, particularly rich in colour. There were ten varieties in all—namely, *Marie Vervae*, *Mons. Chas. Vuylsteke*, *Madame Joseph Vervae*, *Louise Cuvelier*, *Ami Chas. Vermeire*, *President A. d'Heane*, *Ami Victor Cuvelier*, *President Van Imschoot*, and *Le Printemps*. Mr. Turner sent also *White Rambler Rose Thalia*, and *Malmaison Carnation Princess May* in splendid form. Messrs. W. Balchin & Sons, Hassocks, staged *Boronia heterophylla*, *B. serrulata*, *Erica perspicua nana*, and the bright blue *Browallia elata* in splendid form. Mr. D. Storrie, Glencarse, sent a collection of border Auriculas, amongst which the yellow forms were most conspicuous.

Messrs. F. Miller & Co., Fulham Road, S.W., sent crimson and white East Lothian Stocks, with Ferns and Golden Feather. Mr. H. B. May, Upper Edmonton, was represented by a collection of Crotons, including beautiful little specimens of many varieties. The colours were splendidly developed (silver Banksian medal). Hardy shrubs and alpine plants in variety were shown by Messrs. Paul & Son, Old Nurseries, Cheshunt. There were *Cerasus Wateri*, *C. avium fl.-pl.*, *C. myrobalana pendula*, *Kerria japonica*, *Cydonia Maulei*, *Ribes sanguineum*, *Pyrus albo plena*, *Iberis superba*, *Ribes aurea præcox*, *Phlox G. F. Wilson*, *P. stellularia*, *Primula Sieboldi Brilliant*, *Phlox atro-purpurea*, *Saxifraga Wallacei*, *Geum Heldreichi*, *Aubrietia tauricola*, and *Hutchinsia alpina* amongst others (silver Banksian medal).

Cut Roses from Mr. G. Mount, Canterbury, were in superb form. Those shown in the orthodox boxes, as well as others on long stout stems,

were alike rich in colour, of good shape and great substance. Particularly striking were Catherine Mermet, Ulrich Brunner, Mrs. John Laing, The Bride, Susanne Marie Rodocanachi, Général Jacqueminot, Niphetos, Madame Gabriel Luizet, Captain Hayward, and Marie Finger (silver Flora medal). Messrs. J. Cheal & Sons, Crawley, sent various flowers, in which Violas were in charming form, as were Pyrus, Brooms, Cerasus, Acers, Gorse, and many besides.

Two groups of Roses in pots were exhibited by Messrs. W. Paul and Son, Waltham Cross. The plants were healthy, and producing flowers of good quality. There were also numerous cut blooms in boxes. The varieties comprised La France, Duke of Teck, Enchantress, Duchess of Albany, Caroline Testout, Mdle. Eugène Verdier, Jeannie Dickson, Violette Bowyer, Victor Verdier, Danmark, Alphonse Soupert, Gustave Piganeau, Duke of Edinburgh, Gloire Lyonnaise, Madame Montet, Marchioness of Lorne, and Dr. Andry (silver Flora medal). Mr. A. Tulett, Crockenhill, Swanley, sent a good double scarlet Pelargonium named A. Tulett, and Mr. B. Bennett, Dunstable, showed a grand flower of *Dracæna indivisa*. Messrs. Paul & Son sent some Cannas in variety, and a good double yellow *Alyssum saxatile*.

A collection of Alpine Auriculas was arranged by Mr. J. Douglas, Great Bookham, Leatherhead. Several of the varieties were of high quality, notably Melpomene, Almira, Perfection, Captain, Ziza, Dean Hole, Apollo, Melaine, Lord Collingwood, Marie Corelli, Clytie, Firefly, John Gilbert. Mr. G. Stevens, Putney, was represented by a small collection of good Carnations.

The whole of one side of a long table was occupied by Messrs. Barr and Sons, King Street, Covent Garden, who showed miscellaneous hardy flowers and a beautiful collection of Darwin Tulips. Amongst the former were Violas, Primulas, Saxifragas, Orchises, Phloxes, Iberis, Anemones, Fritillarias, Irises, Scillas, and several others. The Tulips were very handsome, and included The Shah, Hecla, May Queen, Chas. Dickens, Aurora, Apricot, Glow, Queen of Roses, Dorothy, Phyllis, Joseph Chamberlain, The Sultan, and Early Dawn. There were also several Tulip species (silver-gilt Flora medal).

ORCHID COMMITTEE.—Present: H. Little, Esq. (in the chair); with Messrs. J. O'Brien, de Barri Crawshay, H. M. Pollett, J. T. Gabriel, W. H. Young, F. J. Thorne, H. J. Chapman, J. Jaques, E. Hill, T. W. Bond, W. Cobb, J. Douglas, T. Statter, H. Ballantine, W. H. Protheroe, and T. B. Haywood.

The group of Orchids from Messrs. J. Veitch & Sons, Ltd., Chelsea, was very handsome. The flowers were of splendid quality, and there was a fine assortment. Amongst the prominent ones were *Cattleyas intermedia alba*, *Schröderæ cœrulescens*, *Mendeli*, *Mossiae*, *intermedia*, and *Lawrenceana*, *Lælias purpurata* and *Latona*, *Lælio-Cattleyas Ascania* and *Wellsiana*, *Odontoglossums Pescatorei*, *Coradeni*, and *crispum*, *Oncidium ampliatum majus*, and *sarcodes*, *Angræcum modestum*, *Cymbidium Lowianum*, *Vanda tricolor*, *Epidendrum Wallisi*, *Masdevallia Wallisi*, *Cochlioda vulcanica*, *Dendrobiums stratus* and *Boxalli*, *Cœlogyne Dayana*, and *Cypripedium Schröderæ candidulum* (silver-gilt Flora medal).

Messrs. H. Low & Co., Enfield, showed Orchids in fine condition. *Cattleyas*, *Odontoglossums*, *Oncidium*, *Dendrobiums*, *Cypripedium*, and *Lælias* were in splendid form. The flowers were of high quality and the colours rich (silver Banksian medal). Messrs. Lucien Linden & Co., Brussels, exhibited some good forms of *Odontoglossums vexillarium* and *crispum*. The spikes were very handsome. Mr. F. J. Thorne, gardener to Major Joicey, Sunningdale Park, showed a grand plant of *Anguloa sanguinea* with one of *Eriopsis rutidobulbon*. Mr. W. S. Barrell, gardener to W. S. Ellis, Esq., Dorking, showed a few *Odontoglossums* of fine quality. Small exhibits of Orchids were exhibited by Messrs. F. Hardy, J. G. Fowler, J. Robson, C. L. N. Ingram, T. Statter, W. Cobb, R. Young, P. Crowley, and W. G. Soper.

CERTIFICATES AND AWARDS OF MERIT.

Alyssum saxatile, fl.-pl. (Paul & Son).—This is a good double yellow form of a justly popular plant (award of merit).

Auricula Perfection (J. Douglas).—A grand Alpine variety. The colour is very rich deep crimson with darker shadings. The eye is bright yellow (award of merit).

Auricula Dean Hole (J. Douglas).—Another Alpine of good quality. The flowers are of good size, the colour being crimson with a black patch round the yellow eye (award of merit).

Auricula Ziza (J. Douglas).—This is a good variety. The outer colour is brick red, darkening to black at the yellow centre (award of merit).

Auricula Sweet-scented Yellow (D. Storrie).—A free-growing strain of yellow flowers of various shades (award of merit).

Azalea Madame Joseph Vervaene (C. Turner).—Bright rose is the ground colour of this handsome Azalea. There are abundant splashes and spots of blood red (award of merit).

Azalea Ami Charles Viermeire (C. Turner).—A superb single variety with deep crimson red flowers (award of merit).

Cattleya intermedia Fowler's variety (J. G. Fowler).—A distinct form. The sepals and petals are delicate lilac, and the front lobe of the lip maroon. The side lobes are pale primrose (award of merit).

Lælio-Cattleya Fascinator (T. W. Bond).—A handsome bigeneric hybrid, resulting from a cross between *Lælia purpurata* and *Cattleya Schröderæ*. The fine sepals and petals are rosy mauve, and the superb lip is velvety maroon with a lighter edge. The throat is pure yellow (first-class certificate).

Lælio-Cattleya Hippolyta Dulcote variety (W. Cobb).—In all respects a grand form of the well-known type (first-class certificate).

Radish First of All (Barr & Son).—A white olive-shaped variety of excellent quality (award of merit).

Radish Suttons' Forcing (Sutton & Sons).—Bracketed by the Committee as similar to the above.

Radish Carmine Forcing (Sutton & Sons).—An excellent scarlet olive-shaped variety. The colour is good and the flesh crisp (award of merit).

Radish First of All (Barr & Son).—Bracketed by the Committee as similar to Carmine Forcing.

Radish Wood's Frame (Watkins and Simpson).—Too well known to need description (award of merit).

Sophro-Cattleya George Hardy (F. Hardy).—A bigeneric hybrid between *Sophrontitis grandiflora* and *Cattleya Acklandiae*. The flower is

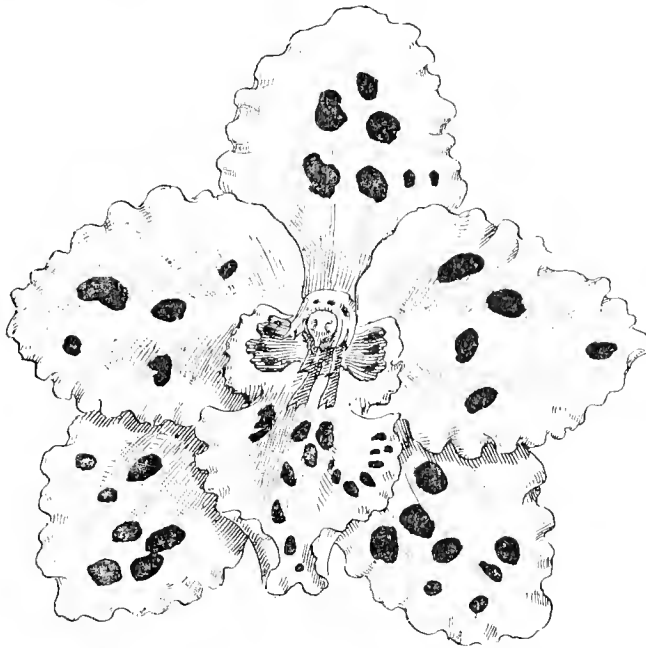


FIG. 78.—ODONTOGLOSSUM PESCATOREI DUCHESS OF WESTMINSTER.
(See page 412.)

dull crimson, and after the form of *Sophrontitis*. The sepals and petals have, however, the spots of *Cattleya Acklandiae* (award of merit).

Spathoglottis aureo-Viellardi (J. Veitch & Sons).—This is a garden hybrid of great beauty. The ground colour of the sepals and petals is deep creamy yellow. There are an immense number of rose-coloured spots on the petals, and fewer at the tips of the sepals (first-class certificate).

THE TEMPLE SHOW, MAY 25TH, 26TH, AND 27TH.

WE are requested to state that for the eleventh year in succession the Royal Horticultural Society will hold its great annual flower show in the Inner Temple Gardens on May 25th, 26th, and 27th. We are informed also that the desire of growers to exhibit increases every year, and that the officials of the Society have a very anxious task in endeavouring to do justice to those growers who support the fortnightly shows of the Society held at the Drill Hall, and yet at the same time to encourage others also to come forward. The space is absolutely limited by agreement with the Temple authorities; no more or larger tents may be erected. Hence every new exhibitor whose entry is accepted means curtailment of the space allotted to previous supporters.

A catalogue of the show will be given gratis to every visitor, and will contain a notice of new and rare plants entered on or before May 19th. It will also contain a programme of the music to be performed each day. On the first two days the band of H.M. 2nd Life Guards, and on the third day the band of H.M. Royal Horse Guards will perform.

The Judges will meet at the Secretary's tent at 10.30 A.M. on May 25th, at which hour punctually the tents will be cleared of all exhibitors and their assistants.

The Fruit, Floral, and Orchid Committees will assemble at the Secretary's tent at 11 A.M. sharp, and the show will be opened at 12.30.

N.B.—All plants for certificate must be entered on or before Monday, May 23rd. Address, Secretary, R.H.S., 117, Victoria Street, S.W. They cannot be entered under any circumstances on the day of the show.

THE ST. BRIGID ANEMONES.—The variety of colour and the long succession of flowers obtainable from these bulbous plants is remarkable, and the surprise is they get so little recommendation from the Journal readers. I know of no other plant that furnishes so wide a range of colour in the most decided and delicate of shades. True, it is a subject that does not furnish the proverbial "Too much of a good thing," of which "H. H. R." speaks—namely, yellow flowers. It is almost a misfortune that there are none of that shade in these fine Anemones. They, like other forms, possess the trait of closing at night and in dull weather, but only a slight burst of sunshine will change the aspect in an incredibly short space of time, that is when planted in beds or masses, and they are influenced by sunshine in exactly the same way when arranged in vases in the house. A good feature in them, too, is their flowers are borne on stout stalks, and their own foliage enhances their attractiveness either in a cut state or on the plant. Seeds may yet be sown in a box of fine soil or outdoors, but I obtain a larger percentage of plants from a sowing made in a box or seed pan.—R. A.

ROYAL BOTANIC SOCIETY.

MAY 11TH.

THE exhibition at Regent's Park was decidedly superior to its immediate predecessors. The exhibits were charmingly arranged in the big tent, and made a very effective display. As is customary, almost all the groups came from trade growers; indeed private gardeners were perhaps fewer in number than is generally the case. We give a brief reference to the majority of the exhibits. The southern show of the National Tulip Society was held in conjunction with the Botanic, but as we received no notification of the fact we could not arrange for a report to appear in the current issue.

Mr. H. B. May, Upper Edmonton, arranged a charming group of Crimson Rambler Roses, Spiræas, and Ferns. All the plants were well grown, and capitally shown. Messrs. J. Laing & Sons, Forest Hill, were represented by a group of miscellaneous flowering and foliage plants, arranged in semicircular form on a sloping bank. The plants were well diversified, and represented excellent culture. Caladiums, Dracænas, Crotons, Boronias, Ericas, Begonias, Gloxinias, various Orchids, and Crimson Rambler Roses were particularly effective. The Forest Hill firm also exhibited floral decorations. The arrangement of the flowers in baskets, bouquets, and other forms was graceful and light.

Cut Roses and plants in pots were staged by Messrs. W. Paul & Son, Waltham Cross. Amongst the best of the varieties were La France, Maréchal Niel, Violette Bowyer, Madame Montet, Queen Mab, Medea, Duchess of Albany, Enchantress, and William Warden. The bank of Tulips sent by Messrs. Barr & Son, Covent Garden, made a bright display. The varieties comprised many of the Darwin section, some species and a few Parrot Tulips. Very good were May Queen, Rose Pompon, Nabob, Goldflake, elegans, Picotee, Buenaventura, Striped Beauty, retroflexa, The Sultan, and Zephyr. The same firm also sent Alpine plants, Irises and Narcissi in variety.

Messrs. J. Peed & Son, Norwood, made an imposing display with groups of Caladiums and Dracænas. Splendidly grown specimens of many of the leading varieties were observed, but space does not permit of their enumeration. Alpine flowers in variety were staged by Mr. T. S. Ware, Hale Farm Nurseries, Tottenham. The assortment was good, and the plants were of an interesting character. Trilliums, Alyssums, Ranunculuses, Primulas, and others were conspicuous. Messrs. W. Cutbush & Son, Highgate, sent a varied assortment of greenhouse plants, such as Ericas, Oranges, Indian and mollis Azaleas, Boronias, Carnations, Palms, and Ferns.

A most interesting table was occupied by Mr. W. J. Empson, gardener to Mrs. Wingfield of Amptill, with vegetables and fruit. This grower's ability is well known, and the exhibit here referred to well maintained his reputation. The vegetables included Leeks, Rhubarb, Seakale, Potatoes, Tomatoes, Mushrooms, Cabbages, Broccoli, Asparagus, Beans, Radishes, Onions, and others, while the fruits comprised Apples and Bananas. Messrs. J. Waterer & Sons, Ltd., Bagshot, staged a collection of Japanese Maples in small pots.

Mr. W. Rumsey, Waltham Cross, staged Roses in pots and in boxes in good variety and condition. Mrs. Rumsey, Crimson Rambler, Magna Charta, Niphetos, Souvenir d'un Ami, Madame Montet, and Sénateur Vaisse were all well shown. Messrs. T. Rivers & Son, Sawbridgeworth, exhibited Cardinal Nectarines in pots carrying handsome fruits. Mr. C. Turner's Azaleas from Slough were grand. All alike, large and small, were symmetrical and profusely flowered. The Slough firm also sent Carnation Princess May and Rambler Rose Thalia.

A superb group of Orchids was shown by Messrs. B. S. Williams and Son, Upper Holloway. The clean, healthy Odontoglossums, Cattleyas, Lælias, Oncidiums, Vandas, and Cypripediums were producing flowers of high quality. Included in the group were fine Anthuriums, Clivias, Ericas, mollis Azaleas, Cannas, Lilacs, and others. Messrs. B. S. Williams also sent floral devices, mainly composed of Roses, Irises, Anthuriums, Odontoglossums, and scarlet Zonal Pelargoniums. The flowers were arranged with excellent taste. Mr. J. Prewett, Bayswater, arranged a table with Spanish Irises and other flowers.

Mr. G. Cragg, gardener to W. Walker, Esq., Winchmore Hill, sent a good group of Orchids of various kinds and varieties. Mr. Kelf, gardener to Mrs. Abbot, Regent's Park, arranged a group of plants, such as Liliums, Crotons, Caladiums, Palms, Ferns, Gloxinias, and others. Mr. G. Mount, Canterbury, sent cut Roses in his well known excellent style and variety. The flowers were fresh, bright, and fragrant. Mr. A. Smith, High Wycombe, showed Maréchal Niel Roses in good form, and Messrs. A. Young & Co., Stevenage, hardy flowers and Zonal Pelargonium King of Denmark.

IMPROVING TASTE.—It is a favourable sign that the taste for such noble flowers as Pæonies, Crown Imperials, Asters, Hollyhocks, and others of their classes is again rapidly coming to the front. Some years ago there was such a rush for "Geraniums," Coleus, and other tender bedding plants to be used in the flower garden, that it began to look as if the grand old plants of quieter bearing might be crowded aside. Happily such was not to be the case. The bright rivals of the greenhouses found wide popularity—much of it deserved—but at last they have found their proper place even in the best of gardens—namely, they are factors, but not the whole thing, in floral adornment. There is, says "Vick's Magazine," a degree of monotony and lack of expression in a bed of "Geraniums" or Coleus that quite unfits them for being a really satisfying element for large use in the garden.

THE YOUNG GARDENERS' DOMAIN.

BUDDLEA GLOBOSA.

THE effect of this hardy deciduous shrub is very telling just now. We have it on pillars on a north wall. In matters of pruning the same applies to Buddlea globosa as to a Rose—viz., the removal of old wood and the laying-in of healthy young shoots. Buddlea globosa produces its flowers (deep yellow in colour, and globular in form, as its name implies), singly, as a rule, on the wood of the previous season's growth. This is the kind of shrub which should be much sought after in the near future, as it produces a pleasing contrast to the rich wealth of blossom on the more important occupants of the wall—the Cherry trees—at this season of the year.—T. P.

AZALEA INDICA.

NOW that the most important time has come amongst Azaleas I think a few notes on their culture might prove useful to fellow readers. About this time the majority of Azaleas have finished blooming, or at any rate the early varieties have, and it is about these I am writing. The first thing to be done after they are brought from the conservatory, or wherever they have bloomed, is to go over them and remove the old flower stalks, so that they will not prevent the new growth from pushing. After that has been done those which were not potted last year should have attention now, and the others top-dressed.

The compost for potting should be five parts of peat with all the rubbish picked out and one part of silver sand. Take care, before they are potted, to have them moist, and also, if there are any strong shoots, to cut them back. In repotting pick all the outside and sour soil off them, give a slight shift, and ram the compost hard. As for top-dressing, remove a little of the top soil and fill up with the above compost. The next thing is to give water and place them in a warm and moist atmosphere, such as a fernery or vinery that has just been started, where they can be syringed morning and evening to encourage new growth. Leave them there till about the middle of June, when they may be placed outside under a north wall on a bed of ashes. Afford abundance of water, especially in the growing season, as nothing checks the young roots more than drought. It is advisable also, while they are outside, to syringe them every afternoon, as it not only freshens them, but prevents thrips and red spider.—A. U.

LACHENALIAS.

IT is interesting to note the various methods of culture of the same plant by different growers. For instance, two writers in the *Journal of Horticulture* a few weeks past described their way of growing *Centaurea candidissima*. One rooted the cuttings in a cool frame, and the other in a propagating pit, in a temperature of 70°, and both methods were successful.

On page 356 "S. S." describes his plan of growing *Lachenalias*, which is different, but not so widely as in the *Centaurea* case, to that adopted at my last place, with very good results, and is as follows:—Place the bulbs at the end of July in 5-inch pots, using the same compost as described by "S. S.," and plunge them in a bed of leaf soil in a cool frame. When started well into growth remove the plants to a shelf in a greenhouse, with a temperature of 45° to 55°. Supply water very carefully, and when the pots are full of roots give weak liquid manure at each watering. After flowering place the plants in a warmer atmosphere, to finish their growth and form next season's flower spikes. When this is complete place the pots containing the bulbs on a shelf or stage close to the glass in the full blaze of the sun, thoroughly ripening the bulbs. There they remain dry till wanted for potting again. *Nerines* and *Freessias* were treated in the same way.

Lachenalias are increased by seeds or by offsets, these latter being taken off at the potting period. There are many varieties, but I consider *L. Nelsoni* by far the best. A few pots of seven spikes, each with about thirty flowers, are very effective among other plants in the greenhouse.—L. F.

MEALY BUG ON VINES.

IN the whole course of gardening there is nothing which is so annoying, and which takes up so much valuable time to exterminate, as mealy bug. It is one of the easiest of pests to find its way into a vinery, and there is hardly any task so difficult as clearing it out of a house. Still there are ways and means, and no expense of time or labour should be considered too great to keep such a filthy insect from our Vines.

Paraffin has been recommended by some people, but I have seen it most injurious. I am acquainted with a gardener who, going to a new situation, found that all the Vines were infested with mealy bug. He first scraped off as closely as possible all the bark that could be safely removed from his Vines, and then dressed with paraffin and water. The result was the Vines were so badly injured that they had to be rooted out; the bug, however, was left intact. After the bark has been removed almost to the quick paraffin is extremely dangerous, as the Vine is so porous and the oil so penetrating that disastrous effects are almost sure to follow.

The treatment I would recommend is to scrape the rods as thoroughly as possible during the winter, to dress the Vines well with Bentley's insecticide, and then to effectually fill all the holes and crevices with styptic. Make a point of burning all the scrapings, to destroy as many of the insects as possible. The dressing will not injure the Vines, and will destroy all the insects that can be reached. The vinery itself should also be thoroughly cleansed, and when possible painted. As soon as fire heat is applied to the Vines the rods should be carefully examined not less than once a week, and what insects are found killed immediately. They

will be found to emerge from the most unlikely hiding places. This continual hunting must be persevered in if success is to crown the effort. Ants by their industrious habits help to carry the bug all over a house, and if there are any about they are sure to find them. This should be remembered, as it helps one very much in the work of hunting.

The above process will entirely exterminate the pest, and it is the only one I think that will. If an easier way is known to anyone I feel sure he cannot confer a greater benefit on the craft than by making known the secret. In any case I trust my fellow writers will express their views on the subject.—S. S.

A CONGRATULATION.

WHILE sending my hearty congratulations to those two competitors who were successful in obtaining the much-coveted, and I may say well-earned reward of their labours, I cannot help extending my sympathy to the two young men who came so near to the winning. It always seems hard to lose a race close to the winning post. Yet they may be quite differently situated from their more fortunate colleagues. A young man, for instance, who must of necessity spend several hours of his own time at his work during the week, together with his fortnightly or three-weekly duty, has not much time for "Domain" writing after he has spent an hour at his botanical dictionary, another hour perusing the Journal, to say nothing of a little recreation, which in my opinion is necessary both for the mind and body.

This routine, however, is only applicable to the months of March to June inclusive, so it is to be hoped that the Editor will pardon his young correspondents for any falling off during the months named, and he may feel convinced they are not wasting their time, but are filling their pocket books with copious notes (both indoors and out), for putting into MS. form at a more opportune time.

If the two young men take their defeat in a proper spirit it will spur them on to still greater efforts, and we shall have the pleasure of seeing their names after September next among the happy possessors of a lasting memento of their early struggles with "practical gardening literature;" and when earned it will be the more prized by them when they remember the old proverb, "The fiercer the fight the sweeter the victory." Would it not be interesting to us to know the respective ages of all the gold penmen?—T. P.



FRUIT FORCING.

Cucumbers.—If aphides appear fumigate on a calm evening, and repeat early the following morning, having the foliage dry but the floors well damped. With a proper amount of atmospheric moisture, and supplies of water at the roots, red spider and thrips will not give much trouble, but the first with white fly and mildew may be kept down by lightly coating the hot-water pipes with sulphur. Plants that have been in bearing some time will be showing signs of exhaustion, and should be removed. Assist young plants showing signs of weakness by removing the staminate flowers and the first fruits, stopping at every third or fourth joint, cutting off all superfluous and weakly growths. Shading will be necessary for an hour or two in the middle of the day when the sun is hot, especially houses facing south. Little or no fire heat will be required by day, shutting the valves at about 8 A.M., and opening them again at about 5 P.M. Syringe the plants moderately between 3 and 4 P.M., keeping a moist atmosphere all day by damping the floors.

Sow seed for raising plants to occupy pits and frames. A fair bottom heat should be secured by using the less decomposed material from Vine borders or exhausted hotbeds, which, with about a fourth of fresh material, will afford all the bottom heat now required. The nights have lately been cold, in which case close pits and frames as early in the afternoon as safe, not allowing the temperature to exceed 90° to 95°, and afford good night coverings. The bottom heat must be maintained by duly renewing the linings.

Pines.—Changeable weather necessitates careful attention in the cultivation of Pines, especially as regards plants with fruit in an advanced condition, a moderately high temperature and a moist atmosphere being essential to their well-doing. Large well-finished fruits are only to be obtained by close attention to details, especially when the plants are cultivated in pots. Watering will require attending to once a week, but avoid indiscriminate periodical waterings. Plants that have heat at the roots by means of hot-water pipes require more water than those having the heat furnished by means of fermenting materials. Admit air at the top of the house at 80° to 90°, closing at 85°, but unless it be desired to enlarge the crowns do not quite close the house. Fire heat must be employed to prevent the temperature falling below 70° at night, and to raise it to 75° in the day, the bottom heat being kept at 80° to 90°. Syringe the plants two or three times a week, according to the weather, and maintain the atmosphere in such a condition as is likely to secure the perfect development of the fruit.

Peaches and Nectarines.—*Trees Started at the New Year.*—The early varieties, such as Alexander and Early Louise Peaches, Cardinal and

Early Rivers Nectarines, are now ripening, and must not be syringed. The other varieties, such as Hale's Early, Dr. Hogg, Stirling Castle, Dymond, or Grosse Mignonne, Crimson Galande, and Royal George Peaches, with Lord Napier, Darwin, Stanwick Elruge, Humboldt, and Dryden Nectarines, will have stoned, or to make sure, they should not be hurried, and the trees will be all the better if the fruit finish with a night temperature of 60° to 65°, commencing to ventilate at 65°, and not allowing 75° to be exceeded without full ventilation. Tie-in the shoots as they advance, removing superfluous growths. If the shoots are crowded thin them well as soon as the stoning is completed. After stoning maintain good moisture in the house, and water the inside border copiously, mulching the surface with about 2 inches thickness of short manure. Unless it is desired to accelerate the ripening continue 60° to 65° as the night and 65° as the artificial day temperature in dull weather, and 75° with sun heat.

Trees Started in February.—The fruits of these will soon be commencing stoning, and should have the number reduced, leaving two fruits on strong shoots, but one will be sufficient on the weaker. The fruit retained must, in all instances, be best situated for receiving air and light. Thin the shoots where crowded, and tie the growths in loosely. The temperature by artificial means must be kept at 55° to 60° at night, and 60° to 65° by day artificially, ventilating from 65° and fully between 70° and 75°. Syringe the trees morning and afternoon, not allowing red spider to secure and maintain a footing on them, and supply water as required to the border.

Trees Started in March.—With the fruit swelling, attention must be given to thinning, and as it can now be seen which fruits have been properly fertilised by their taking the lead in swelling, thin them to two or three on strong shoots and proportionately less on weaker growths. Afford liquid manure to weakly trees, but vigorous trees should be supplied with water only, and have top-dressings of dissolved bones, always dry and crumbly, and pointing in without disturbing the roots. Remove all superfluous shoots, pinching growths retained to attract the sap to the fruit at two or three leaves, and keeping stopped to one or two afterwards, the remaining shoots being trained to the trellis as they advance.

Strawberries in Pots.—Moisture must not be lacking at the roots of these plants, as when the sun is powerful the fruits are apt to have the skin dried, and do not swell well afterwards. After the fruit commences swelling a brisk moist heat is essential, supplying liquid manure liberally until the fruit changes colour. Admit air freely whenever the weather is favourable, avoiding drying currents. Fumigate late plants if aphides appear, but not when in flower. Water the plants twice or three times a day.

THE KITCHEN GARDEN.

Runner Beans.—Seeds sown early in May are liable to decay or become a prey to millipedes. In anticipation of failures, sow more seeds in boxes or pots under glass, hardening the plants before they become drawn, and plant where blanks occur. Protect the earliest rows from frost. For the main crop sow seeds now in the open, and the sites ought to be heavily manured and deeply dug. It is also advisable to dispose the rows in a convenient position for watering and feeding with liquid manure during the hottest part of the summer. Crowding is a common mistake that should be avoided. If grown in single rows these ought to be as far apart as the stakes used are high, the double rows requiring even more space. Groups of three to six plants disposed 3 feet to 4 feet apart each way and duly staked produce extra heavy crops, and so also do plants thinly grown alongside pathways or trained over walks, these proving both ornamental and profitable.

Beans without Stakes.—Runner Beans can be successfully grown without stakes, provided they are not neglected. If the running growth is allowed to develop and become entangled, the crops will be light and difficult to find. Kept closely topped capital crops should result. Sow on well manured, deeply cultivated ground, in rows 3 feet apart, eventually thinning the plants to about 1 foot asunder. Mulch with strawy litter, this answering the double purpose of conserving moisture and keeping the pods clean.

Peas.—Robust, mildew-resisting varieties should be sown now, these frequently cropping heavily when the heat and drought cripple weaker sorts. The sites should be well prepared by manuring, deep digging, or trenching. Sow the seed thinly in wide deep drills, covering with fully 3 inches of soil. If the rows are disposed from 12 to 20 feet apart, early Broccoli, Cauliflowers, Brussels Sprouts, and other winter greens may cover the spaces between, all apparently benefiting from the association. Thinly grown plants also succeed best, as these branch strongly and bear more continuously than do those in a more crowded state. The young plants must not be allowed to fall about before they are supported first by a ridge of soil, and subsequently by stakes.

New Zealand Spinach.—The true Spinach fails in hot weather, and the New Zealand Spinach should be grown as a substitute. As each plant of this is capable of covering a piece of ground a yard in diameter only a few need be grown to provide numerous baskets of young tops for cooking. The plants thrive on a sunny border only moderately rich, and a few seeds may be sown at once in patches a yard apart each way, or the requisite number of plants can be raised singly in small pots under glass and planted out when large enough, or about the first week in June.

Vegetable Marrows.—Seeds should be sown now, singly in 3-inch pots, under glass in gentle heat, so as to secure healthy seedlings for planting, when it may be done safely. Although Vegetable Marrows are principally grown on beds of manure, or a mixture of decaying manure,

leaves, and vegetable refuse in private gardens, better results usually attend the market grower's methods of growing them on flat ridges in the open. Prepare plants for this method of culture, which will again be referred to, as well as a few to crop earlier in a sheltered position.

Work Among Potatoes.—When the tops of the shoots are through the soil, there ought to be no delay in hoeing deeply among the rows, heavily moulding up the plants soon afterwards. This may be the means of preventing injury by frost, and if the haulm is cut down a portion of the stems will probably be saved, and a quick partial recovery take place. Quick-acting manures, notably soot, may be sown over the ground before it is hoed, and if it does not greatly benefit the earlier Potatoes, its effect will be observable in the successional crop. It frequently pays well to protect the haulm of Potatoes, and this is a desirable practice in the case of either extra early or exhibition varieties. One strong uninjured stem is much to be preferred to two or three comparatively weak ones, the former producing the finer tubers. Protection can be afforded either by branches of evergreens or by 6-inch pots, with their drainage holes stopped, inverted over the plants on frosty nights.

Thinning Advancing Crops.—It is a mistake to delay thinning advancing crops. When quite small Onions, Carrots, Parsnips, and such like draw easily, whether the ground is dry or moist. Leave Onions 4 to 6 inches apart, Horn Carrots a similar distance, delaying the final thinning till the roots are large enough to cook. Intermediate and other large varieties may be 6 to 9 inches asunder; while Parsnips and Beet require 8 to 10 inches. Salsafy and Scorzonera may have 9 to 12 inches, and Turnips 8 to 10 inches. Follow up the thinning with a careful Dutch hoeing between the rows, hand-weeding where necessary.

THE BEE-KEEPER.

THE WEATHER.

THE welcome change in the weather will be appreciated by all bee-keepers, and the threatened drought, which a month ago appeared likely to be serious, is now at an end. What effect will it have on bee-keepers? Stocks, on the whole, are remarkably forward, and should a long spell of dull showery weather set in they will be retarded somewhat; but if they have ample stores, and are otherwise in good condition, the queen will continue laying, and the bees will increase at a rapid rate. May is the most important month in the year to the bee-keeper, as success or failure will depend on the condition of his stocks at that time. Bees hatched during the present month are the workers, which will be at their best for collecting honey from field Beans, White Clover, and the Lime.

FLOWERS ON WHICH BEES WORK.

Many country districts are now a paradise for bees, and the Midland counties are no exception. Within a short distance of our apiary are a great number of Sycamore trees now in full bloom, and the flowers yield an abundance of pollen, and also honey when the temperature is favourable. The bees appear to prefer them to any other hardy tree in bloom at this date. The wild Cherry, too, is now wreathed with bloom.

In the gardens there is no lack of flowers. Apples will soon be a mass of bloom. Plums are now over, and thanks to the bees and the fine weather, the fruit appears to have set well. Pears will soon be past their best; the blooms are exceptionally strong, and as the bees have been on the wing more or less daily, the majority of the flowers will be fertilised. Cherries appear to be setting well. In the beds and borders are numerous flowers on which the bees work freely. Wall-flowers are excellent, so are the numerous dwarf plants, such as Aubrietia, Myosotis, Arabis, the different varieties of Primroses, and many of the bulbs to be found in every garden.

MANAGEMENT OF STOCKS AND SWARMS.

Before entering into the question of hives, it may be as well for the beginner to understand the difference between a first swarm and a cast, or second swarm. The old queen always goes with the first swarm; there is then no queen left in the parent hive, but there are several young queens in their cells in various stages. These usually hatch in about eight or ten days from the time the swarm left the hive. If the bees are numerous and the weather fine they will probably swarm again on the tenth day. This is called a cast, and will be headed by a young unfertile queen. In fact there are usually several young queens with the second swarm, but as soon as they are settled in their new home all but one will be destroyed and cast out of the hive. There will also be some more left in the parent hive, which will often swarm the third time, but as they will be useless for storing a surplus they should be returned to the parent stock. It is better, however, to allow them to remain in the skep in which they were hived until evening, and then shake them into the hive. If treated in this manner they will usually settle down to work, and will not swarm again.

If an increase of stocks is required the third swarm may be placed in a separate hive until the queen has become fertilised, when the old queen may be removed from the first swarm, and the young one from the third swarm introduced in her place, the remaining bees being added to the second swarm. There will thus be three strong stocks for another year each being headed by a young fertile queen.

If the swarms were placed in frame hives, which they always should be, there will remain only the original stock in a straw skep. The bees may be driven early in the autumn and added to other driven bees, which, being put in a frame hive and supplied with stores, will come out strong and healthy the following spring.—AN ENGLISH BEE-KEEPER.



All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **S. Rose Hill Road, Wandsworth, S.W.**, and **NOT** to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Madresfield Court Vine Leaves Deficient in Colour (M. B. R.).—It is not unusual for this variety to become pale in the leaves and partially semi-transparent, which probably arises from a deficiency of organic matter in the soil. The best dressing we have found for it has been native guano, applying at the winter dressing or before growth takes place, using $\frac{1}{2}$ to 1 lb. per square yard and pointing in lightly. This with dissolved bones, dry and crumbling, three parts, and two parts double sulphate of potash and magnesia, with a half part of sulphate of iron, mixed, using 3 ozs. per square yard at starting, again after setting, and just after stoning, has given the desired relief, both as regards colour of foliage and fruit.

Making an Asphalt Path (W. J. P.).—A good plan, if not the best, is to procure the requisite quantity of coal ashes and pass them through a quarter-inch sieve; then, when perfectly dry, form a portion of them into a heap, making a hole in the centre, pour in the boiling coal tar and mix as in forming rather stiff mortar, yet thoroughly incorporating and making every part wet with the tar, yet so pliable as to spread readily. The walk should be previously made of the proper form, and a few inches of rubble placed in, leaving space for a 2-inch coating of the asphalt over the rubble, allowing for filling the inequalities. The more even the rubble surface the less asphalt it will take, therefore make the foundation smooth, and let it be dry. Sprinkle over the asphalt coarse sand or, better, fine spar or granite, and when cold pass a light roller over it. After a few days the walk will be solid and waterproof.

Layered Vine (J. J. A.).—We gather that you desire to have a small Vine obtained by layering, bearing one or two bunches of Grapes. If so, you should follow exactly the process shown in the illustration to which you refer—namely, pinching the growths at one leaf beyond the bunch, also all other growths at one leaf, as often as they form, and before the leaves are the size of a florin. "Strong side shoots" must not be encouraged, but prevented. When the pot is filled with roots, take care the soil is not allowed to get dry before watering. Water may be needed twice a day in hot weather, or even thrice as the summer advances, giving liquid manure twice a week. Examine the illustration again, and permit no more extension growth than there shown—i.e., pinch just beyond every small leaf as often as it is produced. Pinching the shoots and supporting the roots are the important points to attend to. Do not sever the layered portion till the Grapes are ripe, and you need not then be concerned about any "bleeding."

Proportions of Sulphuric Acid to Bones (Derby).—Bones broken into small pieces one part (say 1 cwt.), pump or spring water one-third part (say 37½ lbs., or 3¼ gallons), and sulphuric acid half a part (say half cwt.). The process must be carried out very cautiously as regards adding the sulphuric acid, or an accident may happen.

Gasteria Culture (Novice).—You will find that Gasterias, which belong to the Aloe section of the Lilyworts, will do well in a house kept from 45° in winter to 60° and more in summer. They flourish best in sandy loam with a little peat and decomposed dry cow manure, and some lime rubbish and broken bricks—say, two parts sandy loam, half a part of cow manure, and half a part of broken bricks and lime rubbish. The chief care they require is to keep them almost quite dry when in a state of rest in winter. If the pots stand on a damp stone or damp gravel they will absorb enough moisture in the dark months.

Grafting Fuchsias (J. Bates).—You ask "Is it possible to graft Fuchsias?" and we reply most certainly they can be grafted at any time, and almost in any manner, when heat, moisture, and a little shade can be given, and the wood used is thoroughly ripened. The stock should be beginning to grow, and be in advance of the scion in growth. The scion should just be breaking its buds, and the wood should be well ripened. Young wood will do very well if pretty strong; but a good plan is to use some 2 inches of a young shoot, with about 1½ inch of the older wood behind it, making a slice long enough in the side of the shoot to place the old and part of the new wood on it. The slice from stock the scion must be carefully taken off with a clean sharp knife. Tie carefully with bast, make it air-tight with a little clay, cover with a little moss, and damp that frequently.

Unsatisfactory Vine Shoots (G. G.).—The shoots are very pale in colour and stunted in growth, as if lacking nourishment, a not uncommon occurrence when the roots are in a wet and sour border, which sometimes proves disastrous to the prospective crop. To make matters worse the dressing with neat petroleum would tend to prevent the flow of sap, and sometimes has fatal results. It has, we suspect, been injurious to the Vines; but as you have not sent any of the wood that has been treated with the oil we cannot tell to what extent, if any, it may have injured the tissues. Dressing Vines with pure petroleum is a dangerous practice, and it is more than likely it has injured them in your case. If only from the bad state of the border the Vines will recover from their present condition by your improving the medium. A dressing of lime might act beneficially, deferring lifting until a more favourable time.

Cinerarias from Suckers (P. P.).—The plan of raising Cinerarias from suckers has been almost superseded by the sowing of seeds, as seedling plants grow so much more freely. The system about which you inquire ought only to be adopted with superior varieties that it is desirable to keep true. For producing strong offsets the plants should be cut down as soon as their beauty is over, as if left to ripen all the seed that forms this often exhausts them. A cool frame is a suitable position for the cut-down plants, frost of course being excluded, and not an insect must be allowed on the young growths that start from the roots. For encouraging the suckers to root an inch or two of the old soil is removed from the pots, and fresh rich compost added and kept regularly moist. We have often planted Cinerarias out in June in rich soil in a shaded border rather deeply, and they have produced a vigorous lot of offsets, which have formed compact flowering plants for the following spring. The suckers, as to potting, watering, and shifting, require the same treatment as plants raised from seed.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (R. L.).—1 and 2, Varieties of *Iris pumila*; 3, *Berberis empetrifolia*; 4, a form of *Fritillaria meleagris*; 5, *Megasea cordifolia purpurea*; 6, *Lonicera reticulata aureo-variegata*. (X. Y. Z.).—1, *Asplenium viviparum*; 2, *Davallia tenuifolia*; 3, *Nephrolepis tuberosa*; 4, *Cheilanthes hirta*; 5, *Cyrtomium falcatum*; 6, *Pteris umbrosa*. (A. W. H.).—1, *Selaginella stolonifera*; 2, *S. rubella*. (W. W.).—1, *Begonia manicata*; 2, *B. ascotiensis*; 3, *B. odoratissima*. (Reader).—1, *Scilla nutans*; 2, *S. campanulata*; 3, *Aubrietia Hendersoni*; 4, *Doronicum excelsum*. (S. G.).—1, A variety of *Cattleya speciosa*; 2, a poor form of *C. Mendeli*; 3, *Lælia purpurata*; 4, *Odontoglossum Alexandræ*; 5, *O. excellens*. (T. L. S.).—1, *Cassia corymbosa*; 2, *Tritonia crocata*; 3, *Prunus (Cerasus) Padus*. (G. M.).—1, A form of *Fritillaria meleagris*; 2, *Amelanchier botryapium*; 3, *Tiarella cordifolia*. (J. B.).—1, *Brassia verrucosa*; 2, a variety of *Oncidium sessile*. (Capel).—1, *Prunus avium*, fl.-pl.; 2, *P. serrulata*, fl.-pl. (Cray).—Through being well packed in soft green grass the flowers arrived beautifully fresh. The *Rhododendrons* have been splendidly grown, the one unnamed being *R. fragrantissimum*, very fine. The other plants are—1, *Choisya ternata*; 2, *Diosma* or *Adenandra uniflora*. We will endeavour to supply the information you require.

COVENT GARDEN MARKET.—MAY 11TH.

FRUIT.

		s. d.	s. d.			s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	...	1	6 to 4	0	Grapes, lb....	...	2 0 to 3 0
Cobs ...	...	21	0	22 6	Lemons, case	...	11 0 14 0
Filberts, 100 lbs.	...	0	0	0 0	St. Michael's Pines, each	2 6	5 0

VEGETABLES.

		s. d.	s. d.			s. d.	s. d.
Asparagus, per 100 ...	...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4	
Beans, $\frac{1}{2}$ sieve ...	...	0 0	0 0	Onions, bushel ...	3 6	4 0	
Beet, Red, doz....	...	1 0	0 0	Parsley, doz. bnchs....	2 0	3 0	
Carrots, bunch ...	...	0 3	0 4	Parsnips, doz. ...	1 0	0 0	
Cauliflowers, doz. ...	...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0	
Celery, bundle ...	...	1 0	6 0	Salsafy, bundle....	1 0	0 0	
Coleworts, doz. bnchs.	...	2 0	4 0	Scorzoneria, bundle ...	1 6	0 0	
Cucumbers... ..	...	0 4	0 8	Seakale, basket... ..	1 6	1 0	
Endive, doz. ...	...	1 3	1 6	Shallots, lb. ...	0 3	0 0	
Herbs, bunch ...	...	0 3	0 0	Spinach, pad ...	0 0	0 0	
Leeks, bunch ...	...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9	
Lettuce, doz. ...	...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9	
Mushrooms 1 ...	...	0 6	0 8	Turnips, bunch... ..	0 3	0 4	

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36	0	Ficus elastica, each... ..	1 0 to 7 0
Aspidistra, doz. ...	18	0	36 0	Foliage plants, var., each	1 0 5 0
Aspidistra, specimen ...	5	0	10 6	Fuchsia	6 0 10 0
Azalea, per doz. ...	24	0	36 0	Genista, per doz.	6 0 9 0
Calceolaria, per doz. ...	8	0	12 0	Hydrangea, per doz. ...	6 0 9 0
Cineraria, per doz. ...	6	0	9 0	Lilium Harrisii, doz....	12 0 18 0
Dracæna, var., doz. ...	12	0	30 0	Lycopodiums, doz.	4 0 6 0
Dracæna viridis, doz. ...	9	0	18 0	Marguerite Daisy, doz. ...	6 0 9 0
Erica Cavendishi ...	18	0	30 0	Mignonette, doz.	4 0 6 0
„ various, per doz. ...	12	0	24 0	Myrtles, doz.	6 0 9 0
Euonymus, var., doz. ...	6	0	18 0	Palms, in var., each... ..	1 0 15 0
Evergreens, var., doz. ...	4	0	18 0	„ specimens	21 0 63 0
Ferns, var., doz. ...	4	0	18 0	Pelargoniums, scarlet, doz.	4 0 6 0
„ small, 100 ...	4	0	8 0	„	12 0 18 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2 0	to 4 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Arum Lilies, 12 blooms ...	3 0	4 0	Myosotis, dozen bunches...	1 0	2 0
Asparagus, Fern, bunch...	2 0	4 0	Narcissi, dozen bunches ...	1 0	3 0
Azalea, dozen sprays ...	0 6	0 9	Orchids, var., doz. blooms	1 6	9 0
Bluebells, dozen bunches	1 0	2 0	Pelargoniums, doz. bnchs.	4 0	6 0
Bouvardias, bunch	0 6	0 9	Polyanthus, doz. bunches	1 0	1 6
Carnations, 12 blooms ...	1 0	3 0	Roses (indoor), doz.... ..	0 6	1 6
Daffodils, doz. bunches ...	2 0	6 0	„ Red, per doz.	2 0	4 0
Eucharis, doz.	3 0	4 0	„ Tea, white, dozen ...	1 0	2 0
Gardenias, doz.... ..	1 0	3 0	„ Yellow, doz. (Perles)	1 0	2 0
Geranium, scarlet, dozen			„ Safrano(English)doz.	1 0	2 0
bunches	3 0	6 0	„ Pink, dozen	3 0	5 0
Iris, dozen bunches ...	4 0	6 0	Smilax, bunch	2 0	3 0
Lilac (French), bunch ...	3 6	4 0	Tulips, dozen bunches ...	2 0	4 0
Liliumlongiflorum,12 blms	2 0	3 0	Violets, dozen bunches ...	0 6	1 0
Lily of the Valley, 12sprays	0 6	1 0	„ Parme (French),		
Maidenhair Fern, dozen			bunch	2 6	3 6
bunches	4 0	8 0	Wallflowers, doz. bnchs....	1 0	3 0
Marguerites, doz. bunches	1 6	2 6			



OUR OTHER SELF.

DEAR reader, open your atlas, glance at the two hemispheres, and note your own snug little island away in the northern seas, then take a voyage over the Atlantic till you come to the New World, and look at that stretch of country confined on East and West by the two mighty oceans, on the North knowing no limit save the Polar seas, on the South separated from the States by the glorious St. Lawrence and a chain of inland seas. Read her name and title—"Dominion of Canada," and then reflect for a moment. A daughter mightier than her mother, a land of rich treasures—treasures both mineral and vegetable, and treasures drawn from her inexhaustible fisheries. She is a daughter of whom to be proud, and her children are of our blood. We talk casually of the colonies; have we any but vague ideas of their vastness? We do not grasp the fact of their immensity. We do things on a smaller scale here, and in our self-importance we measure all in our own bushel. By their energy and real hard work the Canadians bid fair to outdo us even in those branches of commerce we have made peculiarly our own. Perhaps we are getting effete; we are certainly getting older.

As Canada ranks farming first in her industries, we thought a few notes on the subject would be at least interesting, if not instructive. For these notes we are indebted to Mr. Williams, who only lately wrote so well of Australia and her farming. Forty times the size of Great Britain! Is there not room for enterprise? Nearly half the population lives by agriculture, and that they carry out their work well is proved by facts, and we think these facts speak louder than words.

There are such diversity of soil and climate that all sorts of farming and market gardening are possible, and space is almost inexhaustible. The Wheat districts are Manitoba and Ontario, and the newer provinces of Assiniboia, Alberta, and Saskatchewan; in these latter there are still nearly 239,000,000 of acres that will make into good farms, and only about 8,000,000 acres as yet taken up.

Canada can grow 5 bushels per acre of corn more than the United States, and Manitoba "hard Wheat" has taken the gold medal against the world's competition at an exhibition in London. Canada has the advantage over us in that she can grow all our grain crops, and Maize in addition. Neither can we yet boast of doing much in the way of outdoor cultivation of the Vine. She has the Barley, British Columbia produces the Hop. She can grow one of the most nutritious of feeding stuffs—i.e., Linseed. She can send us half the cheese we import, and many of our best Apples. Having the food at hand she turns it to good account, and supplies our breakfast tables with admirable ham and bacon—pea fed, sweet, and toothsome. It is said that one house in Canada will often kill in one week as many pigs as are killed in the whole of Denmark. Not only are the pigs well fed, but they are well bred.

Dairy work has of late years made immense strides, and one has only to read the accounts of Miss Maidment's visits to various Canadian dairies to see how well and how thoroughly they have taken up the work in its most scientific form. Butter to Japan! and cheese the world over! good, sound, and free from adulteration. Only a few days from England. No wonder the boundless prairies give us of their fresh beef.

The Board of Agriculture acts wisely and liberally, and does all in its power to forward the best efforts of the farmer. All sorts of subjects are brought under its notice, such as creameries, cold storage buildings (a bonus is given for this), the art of winter butter making. Railway and steamship companies are interviewed, and the value of an English market tested. The system of cold storage is carried out throughout the whole journey—that is, the butter only leaves the cold storage room when delivered out of the steamer in the London docks. The experimental farms "run" by Government number five, and there is another with a college attached at Guelph, Ontario, in the hands of the Provincial Government.

Canada may be truly called a country with a future, and a future of great prosperity. Boundless area, good water carriage, hardworking sons, backed up by a wise Government full of enterprise, ready to place a good and needed article at a fair rate on the world's market. Cold as the Canadian winter is, it has been fully proved that most of the fruits grown in England can be grown there also.

Nova Scotia and Ontario are already noted as growers of capital Apples, and on the Niagara peninsula Grapes as a field crop produce immense yields, and Peach, Plum, and Cherry trees produce fine fruit. Strawberries have become a flourishing industry on the St. Lawrence River and the eastern shores of Lake Ontario. On the western slope tending towards the Pacific Ocean and in Vancouver's Island fruit growing has a great future.

There is a doubt whether Canadian farming will ever find much favour with our English agriculturists. They could not readily adapt themselves to the different aspects of life. The distance from each other and from towns, the practical isolation, and the long though brilliant winters are not what we are used to. The living, too, is rough; and the summer work terribly hard and trying. The class of men best suited for this new country are men who have here been working foremen or small farmers—whose ideas are pretty well concentrated on their work, and who apparently need little or no

recreation. Men of this kind with growing sons, who would readily adapt themselves to the manners and customs of the new country, are the sort who ought to emigrate. They bring as capital a thorough knowledge of their work, and willing and capable hands; and from their early upbringing are not always craving for the luxuries and refinements of life as found in the old country.

WORK ON THE HOME FARM.

"It never rains but it pours" would fitly describe the weather of the past week; there has been no day without rain, and some have been exceedingly wet. The net results have been almost nil as far as farm work is concerned.

Another patch of Potatoes, planted as an afterthought, was only completed with difficulty, and at the third attempt, whilst the condition of the land left much to be desired, the ridges exhibiting that bright polished appearance at the sides which denotes an excess of moisture.

Weeds are growing apace, and as nothing could be done towards stopping their growth, work is fast accumulating. A good wind would be very beneficial to start with, and a dry May would be a godsend and hurt nobody now that we have had such a soaking.

Until the land dries and becomes workable nothing will be gained by taking horses upon it, for the treading is more likely to do harm than good. There is manure to be got out of the yards, however, and if it be required for Swedes, and particularly if it has to be carted any distance, this carting had better be done; the extra turning will do the manure good and pay for the extra filling.

We are troubled just now by a neighbour's bad fence; it is nothing but huge gaps, and the owner has put two rows of barbed wire along his own side of it at such a height that it is a good fence for horses or large cattle, but none for calves or sheep. Our grass adjoining we cannot stock with sheep or young cattle on this account until we have ourselves put a strong thorn beard to keep the animals at home. Our neighbour claims that we are bound to fence against our own stock, and some county court judges would agree with him. Surely it is time the law was made plain on this matter. That every owner of fences should be liable to keep them in such order as to turn back ordinary farm stock would appear to be a ruling that should appeal to common sense, and if the Board of Agriculture would get such a law placed upon the Statute Book, it would do much to earn, and would deserve the thanks of farmers of all grades.

OUR LETTER BOX.

"Strong" Butter (E. A.).—Your rations are perfectly right—that is, the food other than the grass. The reason for the strong butter may be from one or two causes. 1, There may be some herb or plant in the grass obnoxious, such as a species of garlic. It is found in pastures occasionally. 2, And this is the most probable cause: the butter is not thoroughly washed when in a granulated form (pieces the size of pin's heads). With a worker there is no excuse for butter being too moist. Is the water supply good? Has the dairymaid attended any classes for instruction? Has the dairy a concrete floor and no connection with any outside drain? Are all utensils scalded and exposed to sun and wind? Is the milk dealt with at once as it comes from the cow house? Is the cow house sweet and wholesome? and are the milkers particular?

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1898.	May.	Barometer at 32°, and Sea Level	Hygrometer		Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture			
			Dry.	Wet.		Max.	Min.	In Sun	On Grass		
		inches	deg.	deg.		deg.	deg.	deg.	deg.	inches	
Sunday	1	29.877	51.7	47.2	E.	47.6	57.1	38.8	75.6	33.3	0.248
Monday	2	29.554	56.1	54.8	N.E.	47.9	69.2	47.4	101.4	43.2	—
Tuesday	3	29.550	60.4	51.5	S.W.	49.0	64.2	46.6	113.7	40.8	0.146
Wednesday	4	29.457	53.2	49.8	S.W.	50.1	57.1	48.4	103.2	44.1	0.043
Thursday	5	29.887	52.2	48.8	S.	49.1	56.1	44.9	87.4	40.9	0.154
Friday	6	29.924	53.1	47.9	N.W.	49.3	62.9	45.3	107.9	41.9	—
Saturday	7	30.359	54.0	47.1	N.	49.4	64.8	39.4	113.5	35.6	0.014
		29.801	54.4	49.6		48.9	61.6	44.4	100.4	40.0	0.605

REMARKS.

- 1st.—Overcast early; dull and rainy after 11 A.M., and heavy rain from 3 P.M. to 4.30 P.M.; foggy in evening.
 - 2nd.—Foggy and drizzly early; occasional sun from 9 A.M., and bright afternoon and evening; gale at night.
 - 3rd.—Brilliant early, and fine day, though cloudy at times.
 - 4th.—Dull and damp with frequent rain till noon; sunshine and showers after.
 - 5th.—Overcast morning with spots of rain; very gloomy at times. Steady rain from 3 to 6 P.M., and showery after.
 - 6th.—Brilliant till 10 A.M., and fine morning; generally overcast from noon, with spots of rain at 0.30 P.M. and 4.40 P.M.
 - 7th.—Bright sunshine almost throughout.
- Rather warmer, and with a little more rain, but it is again less than an inch. No week has had an inch since that ending September 4th, 1897, eight months.—G. J. SYMONS.

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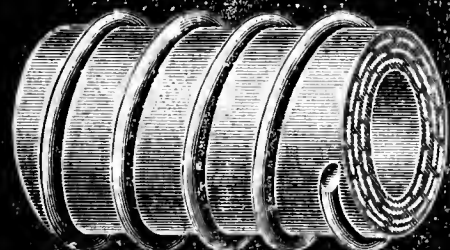
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Journal of Horticulture.

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NOTES ON MUSCAT GRAPES.

IT is hardly possible to have Muscat of Alexandria, still the Grape *par excellence*, ripe before June. Black Muscat (Muscat Hamburg) may be ripened by the end of April, but it sets its berries very indifferently at an early season. Madresfield Court may be described as an improved Black Muscat in the matter of setting and swelling the berries, but it cannot be classed as a Muscat in the same sense as either of the two mentioned. Canon Hall forces well, and has some Muscat flavour, being, when properly finished, a magnificent Grape, and an excellent companion for Muscat of Alexandria.

Crops of Muscat of Alexandria started in December are now ripening, and the Vines must not lack water at the roots. Examine the borders every week, and if moisture be necessary give water or liquid manure liberally and warm, the drainage being free and the border materials of an open nature. The Muscat class of Grapes appear to revel in lime or calcareous gravel where the subsoil is red with oxide of iron. The Vines then appreciate fish and bone meal as top-dressings, about ½ lb. per square yard in the winter, or before the starting period. This suffices for the year, supplemented with phosphate of ammonia and nitrate of potash in equal parts three times during the season—namely, at starting, when the Grapes are set, and again when half swelled or on first signs of colouring. An ounce per square yard of the mixture suffices, or that quantity to 4 gallons of water given to the area stated.

The Grapes now changing for ripening may not need a very liberal supply of nutrition for present demands, but that which is given promotes the health of the Vines. I have found that Muscats like sulphate of lime, and give better results with gypsum than without it. Whether it is the lime that goes to feed the Vines or acts in the soil by keeping it sweet and providing available potash makes no difference. In dissolved bones there is about 25 per cent. of sulphate of lime, and in mineral superphosphates not less than 45 per cent., the latter being best for quick action or use with

nitrate of potash. I do not know how the lime causes the better utilisation of the potash, but the fact remains, and certainly helps the Vines against shanking in the berries. An analysis of natural soil in which Muscats thrive unusually well, shows 34 per cent. sulphate of lime. The soil is a calcareous gravel and contains 3.63 per cent. of iron, but this amount of iron seems to favour the shanking where the sulphate of lime only amounts to 18 per cent. I have suffered terribly from shanking in early Muscats, and have not found anything of any use against it but the superphosphates and gypsum, and the information may be of use to somebody. But there is another side to the effects of superphosphates. An excess may cause "browning," the leaves and young shoots turning hard and brown on young or vigorous Vines, and arresting their progress. There can be nothing simpler than this. Do not overdo the superphosphate, and to prevent shanking use sulphate of lime with a little sulphate of iron (if not naturally in the soil) and magnesia, taking care to ammoniate the iron by supplying organic manures.

When Grapes are ripening is the time when shanking declares itself, hence the foregoing notes are in season. It is equally seasonable to say that it is of no use to apply anything to a close pasty border soured by lack of drainage. Drains for such borders, and a dressing of gravel mixed with the soil, will beat all the fertilisers in existence. I have tried most of them, and found a suitable soil staple of more consequence than all the science in the world. But is not the cultivation of the soil a science?—well, an art, a step up from theory to practice! If the soil be sour, and cannot be interfered with now, do not hesitate to give a dressing of air-slaked chalk lime. A pound or more to the square yard will not hurt anything except the sourness, and may have a most beneficial effect on the Vines. A lighter dressing of lime to close borders annually may prevent the necessity of lifting the Vines, as many borders are too close simply because crumful of organic matter which water cannot pass through freely and wash away by the drainage, not perhaps over-good, yet sufficient for practical purposes. I mention these expedients, as few gardeners are overburdened with men in these days, and many proprietors have a strong objection to having things upset and incurring expense that can by any means be avoided. I have seen old Vines greatly improved by dressing unctuous borders with best chalk lime, and, on the other hand, known some poisoned by applying a heavy dose of magnesian lime. A light dressing of this, not exceeding half a pound to the square yard, does good when heavy dressings of stable manure and thick liquid from manure tanks have been applied to the borders.

Another thing I should like to mention, and that is the exercise of judgment. Some Vines, in a sodden and sour border, that shanked in the berries seriously, were kept so dry that the soil cracked. This had a good effect the first year, and better the next; indeed, they outgrew the shanking, simply through air getting into the soil, not a drop of water being given to the border until the Vines showed evidence of wanting it by the foliage becoming limp, or even slightly flagging. These trifles may seem insignificant to growers who have nothing but fair sailing, and can command as much material and labour as they please, but I have found that circumstances greatly alter cases, and many persons gain success through adaptation of procedure calculated to overcome the difficulties with the means at command, while not a few fail under favouring conditions by lack of sound judgment and failing to discover the cause of a misfortune.

The Editor may perhaps have seen some Vines ruined by over-feeding, also others practically effete for lack of support, and may therefore find a place in "our Journal" for these records of experience. I have, however, had much trouble with Vines through shanking, and confess to never being able to grow early Muscats without losing a few berries. Some people never have any trouble of this kind, or if they have they keep it in the background and put forward nothing but the best examples of their success. I think this a mistake, as than the recording of failures, their cause and future prevention, no information can be more useful. Grapes do not usually shank outdoors, therefore the affection must arise mainly from cultural errors. Something must be wrong, either in the soil staple, its constituents, the

manures and moisture applied, or in the management. It is just as well to look straight at these things and admit the facts, instead of hiding them when they are not to our liking. Muscat Grapes are twice as difficult to grow as the vinous Alicantes and Gros Colmans, and the more difficult to grow, the more shanking.

The temperature, when Muscats change colour, should be kept at 65° to 70° at night, 70° to 75° by day artificially, and through the day from 85° to 95° from sun heat. A circulation of air must be maintained constantly warm and rather dry, but not too dry, air being essential to the perfection of the fruit. If the sun is very powerful, and the panes of glass large and clear, a single thickness of herring nets drawn over the roof will prevent scorching of the leaves and berries, which is often occasioned by the deposition of moisture on them. This is also a common cause of spot, indeed necessary for the germination of the spores of the spot fungus. When the Grapes are likely to suffer through damp arising from the border, mulch it with a little short dry material, preferably clean dry straw coarsely chopped. This and some air constantly enables us to have Madresfield Court free from cracking, and it also answers for the "Duke," a grand Grape, too seldom seen.—PRACTITIONER.

CUCUMBERS IN COLD PITS.

PITS in which bedding plants and early vegetables are now growing will soon become vacant, and it therefore will be for us to look ahead and determine how we can turn them to the best account during the summer months. A considerable amount of such space will be required for Primulas and Cinerarias, which are now growing rapidly, and will every few weeks require a greater amount of space; but after making due allowance for such contingencies there is usually a considerable amount of pit room which can for a few months be devoted to Cucumber or Melon growing.

In the present article we will deal with the culture of the first named, which as a rule gives more satisfactory results when grown in pits or frames than Melons do, although the latter in skilful hands will in fairly favourable seasons succeed splendidly. What they often do not receive is that close attention to detail so necessary to insure success. In one noted fruit growing establishment, where I served for some years as foreman, Melons are largely grown in cold pits, and though the seasons were not always favourable we never experienced a failure. But let us return to the Cucumbers.

Under pit culture, with the plants trailing over the soil, it is just possible to produce many Cucumbers quite as fine and straight as those from plants grown in houses, though there will generally be a greater percentage of second quality. Those who contemplate planting Cucumbers in pits as they become vacant should take steps to have the requisite number of plants ready as required. If no young plants are advancing seeds ought to be sown at once, and if the young plants are grown in strong heat they will be ready for planting three weeks from the date of sowing the seed. The sowing is, however, sometimes not done "just in the nick of time," and when it is important to raise a set of plants as quickly as possible I insert cuttings, place them in strong bottom heat, and obtain well-rooted plants in about ten days. The varieties I prefer for frame culture are Telegraph, Rochford's, and Lockie's Perfection.

Assuming that we have a pit to deal with from which early Potatoes have been dug, a great amount of preparation will not be needed. The soil requires to be simply levelled, and small mounds or fresh soil placed in the centre of each light. This fresh soil may be quite a simple mixture; good turfy loam with a fourth of manure and a little soot added answers admirably. I always like to plant two plants to each light, because if one should through any cause come to grief the other quickly fills up the blank space.

When the main shoots have grown a few inches in length I remove the point, and take two shoots from each plant, stopping these when they get to within a foot of the edges of the pit. Alternate laterals are then removed, and those left stopped at one or two joints beyond the fruit; according to the space at command for leaf development. Before the growth has extended very far I usually add the additional soil required. This is formed of the same ingredients as already given, and a 4-inch layer spread over the old soil, and made moderately firm, answers admirably.

Much of the success of Cucumber culture in cold pits depends upon following an intelligent system of ventilation. A golden rule is to give air early and to close early. A chink given early prevents the temperature from rising rapidly, and on "catchy" days renders the admission of large quantities of air unnecessary. Many who grow Cucumbers are rather timid about closing the lights too early, but I

never hesitate to do so at 2 P.M., during the hottest day in summer. But before doing so those plants that require it are watered, and a thorough syringing given to every part of the plants, as well as the sides of the frame. On dull days the frames are closed without syringing, and after a wet day or night a little air is always admitted for a few hours to dry superfluous moisture.

When the plants are carrying heavy crops weak liquid manure should be applied almost every time water is needed, giving a little soot water occasionally by way of change, and whenever red spider is inclined to be troublesome syringing with clarified soot water will usually effectually keep it in check. It is most important to assiduously remove the small fruits which cluster round the larger ones, as well as the male flowers; if this is not done a great deal of the energy of the plants is absolutely wasted. Deformed fruits should also be removed, as they exhaust the plant quite as much as a shapely one, and when fully grown the former are no credit to the grower.

By attending to these matters, and removing worn-out growths to make room for young shoots, good crops may be grown in frames throughout the summer with comparatively little trouble. A simple method of preventing the under side of the fruits from being blanched by resting on the soil is to place "props" under them. These are easily made in the following way: Cut some stakes about an inch in diameter into lengths of 9 inches, nail across the top a piece of lath 4 inches in length. If the stake is then thrust into the soil the Cucumber rests securely on the horizontal lath.—H. D.

THOUGHTS FOR YOUNG THINKERS.

POSSIBLY, even probably, in submitting a few thoughts to the consideration of young gardeners, there is apparently little to add to what has appeared in the *Journal of Horticulture* on their behalf. But we do not stand still. Things have lately appeared in its pages calculated to set even old gardeners thinking. Those who are in the autumn of life look back on the past, and muse on obstacles encountered and triumphs achieved by the old masters. Grand old men were many of these—devoted florists, and painstaking workers in all departments. Young men—gardeners in the springtime of their career—look wistfully and wonderingly into the future. What will this future be? One of their fixed thoughts, deepening into conviction, should be that it depends on themselves, for "all things are possible to youth."

In opening up a field of thought to young thinkers we may consider in the first place some of the present changes in gardening, as to whether they are of the spasmodic kind, frequently occurring in all phases of life, or whether they are likely to be permanent in their action. Calm deliberation yields prompt decision, on which vigorous action may be taken if the necessity for such can be made apparent. Change begets change. The fine old gardening establishment of a nobleman may pass into the hands of a merchant. The old-time gardener, pure and simple, is not prepared for the change that this involves. The gardener's duties have now to run on severely practical lines, dictated by business instincts, and the gardener may have to be electrician and a dozen things to boot. Not a "gardener's business" may be remarked. True. A gardener's business is gardening, or ought to be from our point of view; but now that the old order of things is rapidly giving way to the new, what do we find?

Having passed from one to the other, I can speak from experience, and "gardening alone" would fail me absolutely in meeting modern requirements. Moreover, I know that some of the best situations with which I am acquainted are filled by men of many parts, who, in adapting themselves to the change, hold positions of such high responsibility that, nominally servants, they are virtually the master's deputy, managing the intricate machinery of a modern establishment in a way that is appreciated by the man of business methods. That fact may well afford food for thought by young thinkers; but those more particularly in view should not aim too high at first in seeking accomplishments before they have acquired what may be termed the rudimentary essentials of the young gardener's education. He must first be a gardener, for if not that he is nothing, but he can be that and more also when occasion arises. If not, he is, of course, the gardener and nothing more, easily dispensed with nowadays, as many know too well. But, and mark this particularly, the man who identifies himself closely with his master's interests over a wide field, as occasion arises, is practically indispensable. Common sense will prevent the misconception that a man cannot be done without, but many a good servant leaves a broad margin of usefulness blank, which often tends to swell the chapter of accidents, the sequel to which is, "Out."

There are a hundred ways and as many opportunities for a man to adjust himself to a position in life. They are, too, generally as open to avoid as they are to embrace. How many openings are there in

the garden alone frequently occurring? Planning houses, heating arrangements, landscape work, and other things, all of which when broached a man can easily shift to other shoulders by remarking that he does not profess to be a builder, engineer, or anything than a gardener. Let us hope he may be fortunate, though it may well be remembered that while such a confession might suffice in the brave days of old, it does not suit modern masters of the merchant type, who are now, so far as situations are concerned, in the ascendant. Hundreds of places there are now where new masters rule by new methods, and the old, stately ways, have been ousted by that practical, vivacious energy running concurrently with up-to-date requirements. In this matter of change alone, there is, surely, matter for reflection, but greater changes still have yet to engage our attention.

I fear many young men have thought they would like to be gardeners, but when the opportunity has come have thought little more about it, leaving the rest to fate or chance, as they drift along in the current of events. This is not satisfactory, for the majority of them hope sooner or later to attain to the higher ranks of gentlemen's gardeners; but as the supply far exceeds the demand, it is vitally essential that they should pause and consider the accomplishments necessary for them to win a prize in so fierce a competition.—AN OLD BOY.

(To be continued.)

WOMEN GARDENERS AND THE EAST COWES HORTICULTURAL ASSOCIATION.

THIS Association has published a manifesto in the "Isle of Wight County Press" against the manufacture of women gardeners in a training college, going on to say—"It is most astonishing to find that this question of women gardeners is allowed to proceed with, to our mind, its damaging effects, uncriticised by the gardening Press of this country. It is ridiculous to suppose that a woman, after receiving three years or more training, one-half of it theory, in a particular college, has acquired all the knowledge necessary either to conduct a well-kept private or public garden in all its cultural details. But the most lamentable fact appears to us to be that a college for producing such results as above described should be promoted under the combined management of three County Councils. If technical education grants are to eventually become the means whereby the hard-working gardener after years of deep interest and devotion to his profession is to be supplanted by a youthful feminine population, the money thus granted had far better be diverted to other channels."

There seems to be room for a few words of comment on at least three points in the manifesto.

1, As to the silence of the gardening press. Possibly its conductors, who are not entirely without experience in matters of the nature indicated, may be slightly less disposed to give such bold advertisements as the Cowes Horticultural Association does to college methods, which its committee condemns. The institution which it names will be obliged by the prominence thus given by Isle of Wight friends.

2, As to the effect of the training. It would indeed be ridiculous to suppose it could make one fair student in a hundred half competent in twice three years for the successful discharge of the varied duties of a long, well, and practically trained gardener. This ought to be regarded as an element of weakness on the one side, and of strength on the other; and would seem to be all in favour of the continuance of the "man" gardener. The British are, in the bulk, a practical people, and only a limited number of them are satisfied to purchase labour, skill, or anything else, except on the principle of value received.

3, As to "three County Councils" promoting and managing a nursery for young ladies, it may be said that scientific and practical instruction in gardening is afforded to both sexes by several County Councils, and appreciated by both. If the Committee of the Cowes Gardeners' Improvement Association are in possession of evidence that public money is applied to speculative institutions to relieve shareholders of financial responsibilities, it is open to the Committee to place the facts before the Government, and in this they would no doubt secure the co-operation of their parliamentary representative.

While we believe there is nothing the gardening press would refrain from doing, which could be properly and usefully done to raise the status and improve the positions of genuine "men" gardeners, we are unable to share with Isle of Wight intensity in fears respecting the "women." True, we do not know how many of the masculines have been displaced by the feminines in the "Garden Isle," but whatever the number, we think the time is distant when the gentle sex will figure largely in horticultural directories. In the meantime we would fain hope that the Island gardeners, who are very good and very earnest, may derive a modicum amount of consolation by the calm contemplation of the

little (or great) fact that there are a hundred times more "men" cooks than "women" gardeners.

In these and future competitive days it may be well to face boldly the ever-growing probability that in contests for positions in various professions and vocations the "best men will win," even if, to speak paradoxically, some of them are women. It seems to be difficult nowadays to define the sexes by occupations; and as a matter of fact we have heard present day gardeners refer to more than one brother in the craft as an "old woman."

We are sorry for their own sakes, more than for the men, that so many young ladies are being led into the belief that by payment of college fees for two or three years they can live happy, arcadian, lucrative lives in the servitude of gardening. A few may do so (and we would much rather see them happy than miserable), but many are bound to be woefully disappointed, as are hundreds of unfortunate men. If a number of educated women would, by proper training, make themselves equally expert with men as high-class cooks (as they might), they would find the "profession" much more remunerative than gardening; and then, perhaps, issue a manifesto against the muscular sex presuming to compete with them in such feminine employment.

COB-NUTS AND FILBERTS.

NUTS in this country may be said to grow under three conditions. First, wild, and as such they may be found in varying quantities in almost every copse in the kingdom, as no plant is more generally prolific than the common Hazel. Secondly, they may be found in the majority of private gardens in various parts of the country, though it may be safely added that in few do they receive the best attention in pruning and training, and consequently the results are generally uncertain. Thirdly, they are grown for profit, and this phase of Nut culture belongs almost entirely to the county of Kent, to the end that in their season Kentish Cobs are a household word, and find ready sale. Yet it is a reasonable question to ask why they are not generally cultivated in other counties. The plant requires no extraordinary conditions of soil or culture, and succeeds on sites that would be quite unsuitable for other kinds of fruit.

With reference to Nut culture in private gardens the method of treatment, generally speaking, differs widely from that adopted by the Kentish fruit grower. The fact that Cobs and Filberts, which are subjected to no regular system of pruning and training, will and do produce fairly good crops of fruit, is very often put forward as an argument that pruning periodically is not necessary, and it is when we come to reckon up the weight per acre, taking one season with the other, that we see the advantages of a properly trained bush to begin with, followed by systematic pruning. The private garden custom, which I treat as general, though there are doubtless many exceptions, allows the bushes to make free unchecked growth, which for a few seasons may be quite right, but in time they become overcrowded, and represent a thicket, the inevitable consequence being that the only Nuts produced are at the extremities of the branches, and the whole interior space is wasted. This state of affairs continues till the bushes have grown out of bounds, and have to be headed back, and the intervening seasons, till fresh bearing wood is made, are lost.

Again, Nuts are not considered a high-class crop in gardens, and therefore do not receive the same care in the choice of soil and situation as falls to the lot of Apples, Pears, and so forth. It is a mistake to fancy that Nuts will prosper anywhere, simply because they will grow where other fruits will not. I have seen plantations of Filberts in cold, water-logged, clayey soil, where sunlight rarely penetrated. Growth was luxuriant enough, but no fruit followed, and Nut culture was abandoned as hopeless. In another district, north of the Trent, in a light shallow soil resting on sandstone, Filberts did splendidly, and though the Kentish system of training was unknown, good crops were gathered most seasons. Similar instances could be quoted from other districts, which makes it appear strange why Nuts as a market crop should be confined practically to one county.

Though Nuts are accommodating as regards soil, and succeed well in a brashy stony medium on sunny banks and hillsides, they demand food—an item very often overlooked in private gardens, and there is no doubt that the success of Kentish Nut orchards is due largely to the substantial dressings of farmyard manure, rag waste, and chemicals they annually receive. Having drawn comparisons between Nuts as they are generally treated at the hands of the private gardener and the market grower, it will be well to trace the plant's life from infancy, beginning with propagation.

There are several methods of raising Cob Nuts and Filberts, the two most common being from suckers or layers. Of these the latter course is recommended, as bushes raised from suckers generally show a tendency to continue throwing up growths from the base, and this is not so marked when propagated from layers. To raise plants by this method shoots two or three years old are notched and pegged

down in the autumn, covering with 3 or 4 inches of soil. By the following autumn they are rooted, and may be removed to a nursery bed, and planted in rows about a yard apart and 2 feet asunder in them. It is here that the bush is subjected to its early pruning and training, as a good foundation must be laid, without which it is useless to hope to get a well-shaped and profitable bush or tree. Suckers are the young growths emitted from the base of the old bushes, and if these are taken off in the autumn with a few roots attached, and planted in nursery rows, they continue growing till large enough to be removed to their permanent quarters. Probably this is the quicker way of raising Nut bushes, but for the reason stated I prefer them from layers. In any case the nursery bed should be deeply cultivated, and, if needed, farmyard manure incorporated with it. The situation also should be sunny, so that the conditions may be as favourable as possible for the making of stout healthy bushes, in the best form for bearing.

Whatever differences of opinion may exist on pruning generally, I think that most persons agree that the time when the careful use of the pruning knife is necessary is during the first few years in the life of a fruit tree, or while the foundation is being laid. Nuts are no exception, and it is in the nursery bed that steps are first taken for the formation of the thousands of model bushes that continue fruiting for years in Kentish plantations. In the first place, it is necessary to have a clean stem about 18 inches from the ground, consequently all the lower buds are removed at the time of transplanting the layers in the autumn. In the spring the tops of the plants are also removed, leaving, say, half a dozen buds. It is from these that the first branches are obtained. Three or four of the stronger, dispersed at even distances, are sufficient for the first season, and the remainder may be removed. The shoots which are to form the main branches are allowed to extend to their full length, but all weak side growths may be pinched off. No strong shoot is required in the centre, as Nut bushes are best grown cup-shaped, with the middle open. Pruning the next season is composed of cutting these leading shoots back to half their length, which will cause the emission of strong breaks below, and these breaks are to form main branches. It is important to avoid overcrowding, therefore if six or eight leading branches can be insured the second season they will be ample.

The foundation is now laid, and the plants in their permanent quarters, where they remain to become well established before transplanting. All young plants will not form good specimens, and when the heads are weak it is a good plan to cut them back and get fresh growth from the main stem. Up to this time the bush has really been going through the process of formation, with the leading branches evenly disposed in cup-shape and the centre open. Pruning and other details will be referred to in a future issue.—A WORKER.

ROYAL HORTICULTURAL SOCIETY.

MAY 10TH.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters (in the chair); Mr. A. Sutton, and Rev. Professor Henslow, Hon. Sec.

Morchella, Species.—Some specimens were sent of a small species of this fungus, which appeared in a garden bed; but the locality was not recorded.

Peas, Decayed.—Mr. Cooke, The Croft, Detling, Maidstone, forwarded some young plants of the "American Wonder," which had failed to grow. They were sown last November, and while many are doing well, others close by turned a sickly yellow. Mr. Sutton observed that his experience was that no wrinkled Peas, as the above, were suitable for autumn sowing; the skins, being more delicate than those of round Peas, will not stand the winter so well. This was, therefore, the probable cause of failure.

Freesia Bulbs Arrested.—Mr. F. Egbert Hollond, Satis House, Yoxford, sent some bulbs which had been planted last July, had never thrown up any leaves, but had formed fresh bulbs upon the old ones, which had withered. It appeared to be a case common in Potatoes, when it is called super-tuberation; fresh tubers being formed at the expense of the old one. It was possibly due to the Freesia bulbs having been planted at the wrong time of the year, energy being expended in a wrong direction.

Cineraria Hybrids.—Mr. James, Woodside, Farnham Royal, Slough, sent a collection of hybrids raised between (*C. cruenta* × *Garden C.*) ♂ × *C. lanata* ♀. They were a small selection of a numerous progeny, the greater number of which were said to resemble the garden form; but the present ones had a tomentose stem and branches, as well as the under surface of the leaves, which also in form resembled *C. lanata*. The blossoms were rather small, some being a pure white, others mauve, but remarkable for their quantity. Unfortunately the best plant with white flowers refuses to set much, if any seed; but it was hoped that Mr. James would persevere and try to establish a new race, which would certainly be attractive from the silvery appearance.

Begonia Leaves Diseased.—Mrs. Caddy, Lion Gate Gardens, Richmond, sent some leaves decayed round the margins. They were forwarded to Mr. W. G. Smith for further examination.

PROFITABLE FRUIT GROWING.

(Concluded from page 403.)

My plan of occupying a whole house with one Vine with the least possible loss of cropping space would be to plant the Vines along the front in the usual way, about 3 feet apart. Crop and prune in the usual short spur system until they have reached the top—which may be about five years from the first year of fruiting. Now select a healthy Vine about the centre of the house. From this Vine allow leaders to grow at right angles from both sides, beginning at the bottom wire and continuing every 18 inches to the top. Allow these leaders to grow 6 feet, then stop. Disbud and make room for them where they cross the two upright rods on each side of the selected one. Crop the rods on each side of them heavily, and cut out as soon as the fruit is off. At pruning time cut back the horizontal canes to 3 feet. Disbud all growth from the under sides, allowing laterals with fruit to fill the 18 ins. of space above, and leaders again to extend other 6 feet. Repeat this annually until the house is filled from the centre Vine, which would be for a house 40 feet long about fourteen years. You would have the benefit of a large amount of young cropping wood each year and two rods heavily cropped.

If desired, the house could be again filled with young wood and fresh rods from the original one in the centre by a similar process of taking them up from the horizontal rod at the bottom wire.

Whichever style is adopted it is important that no crowding of the foliage takes place. The trellis should not be nearer the glass than 16 or 18 inches. At this distance the shoots can be stopped and allowed to remain with their points to the glass until just before the bunches are flowering. They can then be tied down in half the time to their proper places without risk of heeling off. This operation of tying down is generally done too soon in private places. The consequences of precipitation in this matter are very serious, as has more than once been pointed out by experienced cultivators.

As to the best varieties to grow, the Hamburg amongst blacks is still the favourite for early work, but unless for this, or under certain circumstances, it is about the most unprofitable of any, as it will not carry and finish a heavy crop. Madrestfield Court is nearly as early, and when well grown will fetch a much higher price. Gros Colman for a late sort has no equal, and has entirely crushed Lady Downe's out of the market. Alnwick Seedling, where it does, is good, as it will finish a heavy crop; besides, it can be planted 6 inches closer than most of the others. The habit of growth of this variety is the most perfect of all the Grapes I know—medium sized, short jointed, hard well-ripened wood, not so subject to insect attacks as the others. Were it not its bad setting qualities, it would take a different place than it does for market work. Alicante, for an all-round black Grape, owing to the great weight of fruit it can carry and finish, is, I believe, the most profitable of all, and perhaps the most largely grown for market purposes. One of the largest and best Grape growers round London once told me that he could take more money out of a house of Alicante than out of one of equal size filled with Canon Hall Muscat, though the latter were not sold for less than 5s. per lb. Muscat of Alexandria is about the only white worth growing. The object to be aimed at in selecting and growing is big berries and high finish. Flavour is of secondary importance.

I did not intend saying so much about Grapes—though there are a few points in their cultivation which I have not touched of much importance. I cannot help but think that all I have said is but in a sense wasted words, for I would not recommend you to begin growing this fruit for market at its present value, and I am afraid the tendency of prices is still downwards. Tons upon tons of good hothouse Grapes are now sold at an average of 1s. per lb. There is something wrong

certainly when the grower gets say 1s. 6d. per lb. for growing and marketing, and the retailer who hands them over the counter to a customer gets an equal amount for doing so. But to state a remedy is not so easy. The only one I can think of, but which would only be applicable to the smaller grower at a convenient distance from large centres of population, would be for him to take his produce direct to the consumer. The butcher, the baker, the grocer, and the milkman go their daily rounds with their vans, and have a circle of good customers. Why not the fruit grower? At present this is left to a class of hawkers, whose goods, like themselves, are not always inviting. I do not know of two branches of industry that should go better together than dairying and fruit growing. Something similar has often been recommended, and from very high quarters too, but the

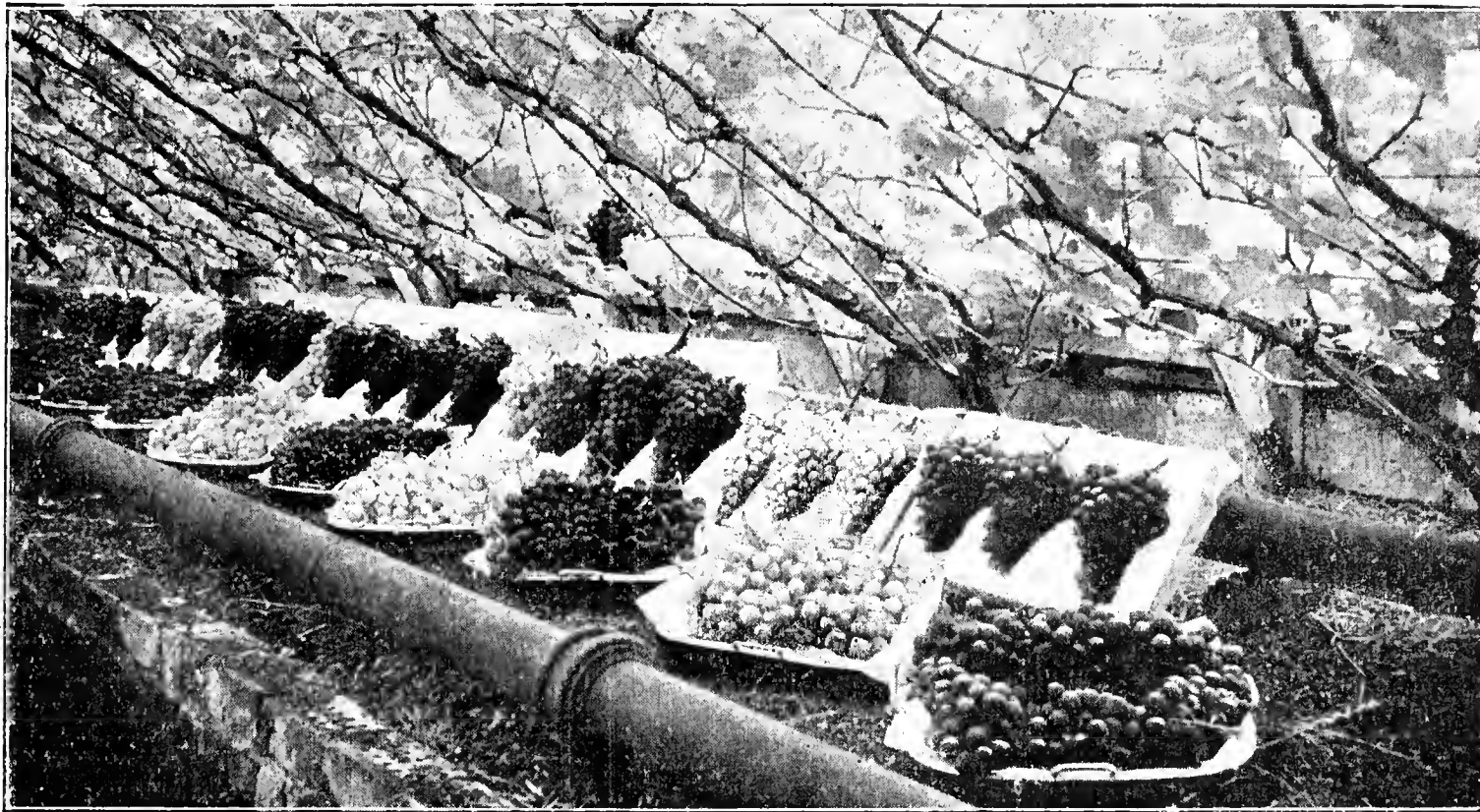


FIG. 79.—MR. D. BUCHANAN'S EXHIBIT OF GRAPES AT EDINBURGH SHOW.

mistake in the advice is that farmers have been advised to take to fruit growing, when it should be fruit growers take to dairying. Milk, butter, and eggs are always in request. The customers for these would form a connection for the produce of the garden. The consumer would get his fruit and vegetables fresher and cheaper, and the grower would save the profits of two or three middlemen, which would amount to nearly double what he now gets.

No lecture on fruit growing would be complete without saying something on packing. We have not time to go into particulars. Whatever style of sending fruit to market is adopted, you cannot be too particular in seeing that it is well done, honestly done, and tastefully done. The very best and most reliable labour at your disposal should be employed for this most important department. Grade all fruit thoroughly; it will pay you better sometimes to throw damaged or inferior samples on the rubbish heap than to get a bad name. Once this is got, it is not so easy to get rid of. Your produce will always find a readier and a better market if neatly, tastefully, and honestly packed.

In conclusion, let me say that in treating this subject of profitable fruit growing it has been my endeavour to depart a little from the lines usually followed, in the hope that old truths might be seen in a new light, and that whatever is new or fresh might be the better impressed upon your memory, to stimulate and strengthen independent thought and action, but above all to point out that it is well-directed individual effort that is the mainspring of success. If anything I have said will in any way help you to this end—of making you deeper thinkers and better workers, with an increased interest and love for your work—my object and my labours shall not be in vain.

—D. BUCHANAN.

[We congratulate Mr. Buchanan on the excellence of his lecture. He appears to be one of the few men who can write as well as work, and work as well as write. We last week published an example of the results of Vine border renovation, and have now pleasure in giving a very much reduced photographic representation (fig. 79) of his exhibit of Grapes at the Edinburgh Show. Our correspondent informs us that he will send some notes for our next issue relative to the ventilation of vineries. It will be remembered that several points on this subject were raised by Mr. W. Taylor, of Bath, on page 404.]



WEATHER IN LONDON.—From the time of sending our last issue to the press until Monday morning we had heavy showers each day. The nights, too, were generally wet, and the mornings and evenings cold. On Sunday it was quite dark at intervals, and householders had to light the gas at the time of the midday meal. On Monday and Tuesday it was bright and warm in the sun, but the wind was cold in the shade, while on Wednesday the conditions were similar.

— WEATHER IN THE NORTH.—The weather of the past week has been variable, but decidedly cold throughout. A good deal of rain has fallen, and hail showers have been frequent. The higher hills were, on the morning of the 11th, thickly covered with snow, a heavy fall having taken place in the central and western districts of the county. Frosts have been registered on several nights. On Saturday morning dense hoar frost covered the ground. Early Potatoes were blackened, but the day was fine, as was also Sunday and Monday, with coldish N.E. wind. Tuesday morning was wet, but milder.—B. D., *S. Perthshire*.

— EARLY CABBAGES.—The mild winter has had the effect of bringing the Cabbage crop to maturity at an early date this year, quite full hearts being cut for Easter. Formerly Whitsuntide was considered a very good time to have Cabbages ready to cut, but Ellam's and other early kinds extend the season by some weeks. Earlier than the date named I do not think this vegetable is needed, for there are plenty of other green vegetables available as a rule. Express, a variety I sowed for the first time last autumn, is far behind Ellam's—quite 50 per cent. bolting. Early Offenham and Flower of Spring follow Ellam's very closely, and are really invaluable, either for large or small private gardens or the market grower.—W. S.

— A TRAP FOR THE DEAN—NOT CAUGHT.—Writing in response to a letter from the Editor of the "Vegetarian" asking for his opinion of the views recently expressed by Sir Henry Thompson, the Dean of Rochester says that man is bound by reason, and yet more by religion, to minister so far as he can to the capacity for enjoyment possessed by all animals, and to protect them from cruelty and from all unnecessary pain, but concludes: "Allow me to add that, although I quite agree with you that we eat too much flesh meat and too little of vegetables and fruit, I see no more harm in partaking of lamb and mint sauce now than there was in eating the paschal lamb and bitter herbs by the children of Israel, and I believe that our relish of a haunch of venison is quite as justifiable as it was with Isaac."

— READING GARDENERS' SOCIETY.—The first meeting of the summer season was held on Monday evening last, when the Chairman of the Association, Mr. Turton, presided over a good attendance of members. The subject for discussion was Hardy Flowers, including shrubs and bulbs, which was ably introduced by Mr. Townsend, gardener to Sir William Farrer, Sandhurst Lodge. A discussion followed. An interesting feature of the meeting was the large display of cut flowers contributed by Mr. Turton, Maiden Erlegh Gardens; Mr. W. Smith, gardener to Miss Neild, Greenbank; and Mr. Townsend, the latter exhibiting a splendidly grown Anthurium showing forty-three spathes. A vote of thanks to the lecturer and to those members who had brought the flowers ended a pleasant evening.

— THE QUEEN AND LONDON'S OPEN SPACES.—Mr. G. Shaw-Lefevre, L.C.C., opened, on Saturday afternoon, Charles Square Recreation Ground, Pitfield Street, Hoxton, acquired by the London County Council and the Shoreditch Vestry at a total cost of £1000. Since the year 1604 the ground has been used exclusively by the inhabitants of Charles Square, and as the result of lengthy negotiations it was purchased by the Vestry for £300. Close upon £700 has been expended in laying out the ground by the Metropolitan Public Gardens Association. In declaring the ground open to the public for ever, Mr. Shaw-Lefevre said that within fifteen miles of the centre of London there were 25,000 acres of land maintained for the use of the public, and of that they were indebted to the Queen for 5000 acres in the shape of Royal Parks. As a matter of fact, the public owed much to the generosity of her Majesty in that direction, for she had done more than any of her predecessors to provide beautiful parks and open spaces for the use of the people in the metropolis.

— A GERMAN ROSE SHOW.—We are asked to state that the Gotha Rose Exhibition will take place on July 10th—12th next. All communications to be addressed to the Local Committee at Gotha, Thuringia.

— SHIRLEY GARDENERS' ASSOCIATION.—The monthly meeting of the above Society was held at the Parish Room, Shirley, Southampton, on Monday, when the President presided over a good attendance of the members. Mr. E. H. Bellairs, Wingfield, Christchurch, Hants, gave a most interesting lecture on "Bees and Bee-keeping, and the Relation of Bees to Flowers," which was illustrated with limelight.

— STRAWBERRIES AT BOTLEY.—The following observation came before my notice on a Strawberry plantation near Botley this spring. The plants, particularly those in low lying parts of the field, had gradually dwindled away, the roots having completely decayed, the cause being an excessive application of farmyard manure. The plants were all right as long as the manure remained in an open spongy mass, but when it became thoroughly sodden, and almost impervious to air, the roots were eventually killed owing to the formation of humic acid and the absence of air in the soil due to the sodden manure. It is seldom that an excess of manure is given in field culture, but one invariably finds equally bad results in gardens, not only in Strawberry beds, but likewise in Roses.—J. N.

— PRICES IN THE MARKETS.—Fairly good green peas can now be had at 5d. per lb., but 1 lb. of English makes as full a dish as 2 lbs. of the "foreigners," which are small and comparatively flavourless. French Beans are 6d. a lb. and upwards. Cauliflowers are very cheap, and fresh spring Cabbages are now coming in. Cucumbers and Lettuces are plentiful, and English Tomatoes are 10d. per lb. Rhubarb is extremely cheap. Young Carrots and Turnips are sold at about 4d. the lb., and are very good. Asparagus is cheaper and more abundant. Strawberries are now down in price to 2s. 6d. a basket, holding about eighteen Royal Sovereigns. New Potatoes range from 2d. per lb. There are still satisfactory old ones to be had, but they require to be boiled in their jackets. Spinach can be had at 1½. a lb.

— A TRANSFORMATION SCENE.—The recent warm gentle rains have had their effect on vegetation, with the result that the whole country has assumed a mantle of vivid green. In Kent much of the early fruit blossom is over, and so far as appearances go there are reasons to hope for abundance of Plums, Pears, and Cherries. Apple blossom is later, and the orchards are now a picture. Since the rain came cold winds have disappeared, and the genial intermittent showers and sunshine have altered the appearance of crops in the garden. Early Potatoes are well through the ground and making robust growth, and Peas, which were at a standstill apparently for some time, are now growing apace. Strawberries are coming into bloom, and small fruits generally show signs of heavy crops. Marked progress is apparent everywhere since the welcome rain came, and the warm close atmosphere is conducive to rapid growth.—V. T.

— LATE TULIPS AT LONG DITTON.—Just now the fine collections of late Tulips at the Long Ditton Nurseries are at their best. It is rather difficult to clearly define the time which is assumed to exist between early and late Tulips, for the doubles follow the early singles, the Parrots follow these, then some midseasons fill the gap, and last of all in come the latter late sections, florists' and selfs, many of which keep the garden gay up to the end of May; but few are more beautiful now than are those which, for trade description, are classed as the Darwin section. There are admittedly breeder Tulips, yet the bulk of them seem to be unbreakable, and for that reason they constitute not only reliable, but most beautiful selfs. Very free reference was made to these Tulips in the Journal last year. Those who want beautiful features in their garden borders should have dozens, and plant them in clumps of six bulbs in the early autumn, making the soil good for them, but not unduly rich with manure. Very beautiful are Gipsy Queen, maroon crimson; Cordelia, purple; Joseph Chamberlain, rich crimson; May Queen, soft rosy salmon, a lovely tint; Phyllis, creamy pink, also exquisite; Blushing Bride, red, flushed cream; The Sultan, very dark; The Shah, reddish crimson; and Isabella, evidently sport from Blushing Bride, white, flushed red. These are but a few of the many. Very charming, too, are the Dideiri section, with their long pointed petals and refined aspect in yellow and white, and especially elegans alba, the petals of which are wire edged red. With the cooler weather and abundant moisture prevailing, it may be possible for Messrs. Barr & Sons to show a good collection of Tulips at the Temple on the 25th; but however shown, no method of display can for one moment compare with the beauty seen in masses growing luxuriantly outdoors.—A. D.

— **EXIT THE PAPER-KNIFE.**—I am in entire harmony with "The Missus" in her congratulations *re* the new aspect of the *Journal*, and the abolition of the leaf-cutting guillotine, a real improvement, for which in horticulture the *Journal* is entitled to all credit for its excellent example. Will other papers copy, and go and do likewise?—A.

— **BLACKS IN TOMATOES.**—We grow our Tomatoes in a three-quarter span-roofed pit, running east and west. They are planted along the back and front of the pit; the plants on the back are trained up the wall, and then on to the quarter span of glass. It is on these plants that the fruits are often affected with the black blotches. The blotches have never appeared on or near the flower points, but always on the sides of the fruit. Two very notable facts led me to the conclusion that it is the sun coming on the fruit when in a moist state that begins the mischief. It is only the thin-skinned varieties that are attacked; thicker skinned sorts are free from it, and along the front of the pit, where the plants are trained up about a foot from the glass, and the foliage keeps the sun from the fruit, not one has suffered. By giving more air at nights, and putting a little whitewash on the glass, we got clear of it.—N. N.

— **MEGASEAS.**—It is important that the unlearned should know that Megaseas are no longer existent. They have disappeared from nomenclature absolutely as such. That is at least the botanists' dictum; but they live still as Saxifragas. There is a huge clump of a lovely variety on the rockwork at Long Ditton, and on inquiring its name from Mr. W. Barr, he told me of the new appellation. Instead, therefore, if this truly splendid variety be wanted for Megasea purpurea, Saxifraga ligulata cordifolia purpurea must be asked for. Readers of the *Journal*, of course, like to be up to date with correct naming, but they are a long way in the rear if they have not the superb Saxifrage in their gardens. To get a fine effect, plant three or four pieces, some 12 or 14 inches apart, on holding soil, and in angular fashion, and leave them alone to form a noble clump of leafage and bloom in a year or two.—D.

— **NATIONAL AMATEUR GARDENERS' ASSOCIATION (LIVERPOOL BRANCH.)**—On Thursday evening the monthly meeting of the above branch was held in the Common Hall, Hackins Hey, Liverpool, A. W. Ardran, Esq., presiding over a good attendance. The exhibits were of a high order, especially the cut blooms of Niphetos Rose, staged by Mr. Lunt, those of Catherine Mermet staged by Mr. Hoskyn also being worthy of commendation. Mr. Redfern won with miscellaneous cut flowers, Mr. Cangle with a fine Fern, whilst Messrs. Drake and Lunt divided the special prize, the former with a good Selaginella, and the latter with Lygodium scandens. Other interesting flowers were shown for points. The lecture was given by Mr. R. Pinnington of Roby, who chose for his subject the culture of Lilies in pots. Every point in culture was clearly dealt with, as well as staking, hints on carrying the plants to exhibition, and varieties. The Chairman, in proposing a vote of thanks, said the lecture was more valuable on account of its brevity, therefore more easily understood, and he was sure everyone thoroughly enjoyed it. Several questions were answered by Mr. Pinnington.

— **APPLE CALVILLE ROUGE.**—There has not been shown at any time this year in the flavour competition a handsomer or more beautifully coloured sample of any Apple than was the one of Calville Rouge Mr. Woodward brought up from Barham Court on the 10th inst. Whilst not of high flavour, for none of the varieties shown had real flavour, the flesh was much pleasanter eating than was that of the rather hard-fleshed Herefordshire Pearmain, placed first, whilst as to appearance it was far ahead. Could everyone produce such samples in abundance as Mr. Woodward had of Calville Rouge so late in the season, they would possess almost a fortune, but the variety only succeeds in a warm position; it will not do at all in cold districts or situations. It is a capital Apple for a west wall, where on trees worked on the Paradise stock it finishes admirably. The fruits shown were of good size, conical, beautifully coloured, the flesh soft, and a long way superior to the best in the market, none purchasable at from 5d. to 6d. per lb. I should think as dwarf trees the variety should do well in southern districts on warm sites. Evidently the fruits keep splendidly. I am a little at a loss to understand whether this Apple is the same as some growers term Calville Rouge Précoce. In one trade list I find the variety is classed as a dessert variety, but though called Précoce, is said to keep well till February. No Calville Rouge simply is in that list. In another authoritative list there is Calville Rouge only, there classed as a kitchen variety—ripens from March to May—but there is no mention of the Précoce variety. Are they really identical, and if so, why Précoce? Perhaps Mr. G. Bunyard will help us out of the dilemma. In the R.H.S. lists Calville Rouge Précoce is classed as dessert, but there is no mention of Calville Rouge.—A. D.

— **WAS IT A PUN?**—A week or two since an esteemed friend and amateur gardener mentioned that he had gathered some capital Mushrooms in his garden. I asked whether he had made a bed for them. "Oh, no," he said, "they came up quite spontaneously." Suddenly he realised that he had made an unconscious pun. Henceforth we shall have to understand that Mushrooms on prepared beds come up quite spontaneously.—A.

— **SAINTPAULIA IONANTHA.**—Though this charming little stove plant is now fairly common, it does not appear to be largely grown in private gardens. Belonging to the family of the Gesneriaceæ, and hailing from the Dark Continent, there is sufficient in its neat and attractive appearance to recommend it. The green hairy leaves are not unlike those of Gloxinias, but smaller and less fleshy. The Saintpaulia has been called the hothouse Violet, as its deep blue flowers, produced on stems 3 or 4 inches in length, are not unlike those of the common favourite. If raised from seeds great care is necessary, as the seeds are of diminutive character; but with ordinary attention the plant may be had in bloom continually through a greater part of the year. When in full bloom this is one of the most attractive little plants of recent introduction.—G.

— **EARLY BLOOMING VIOLAS.**—We want many of these hardy bedding plants to bloom much earlier in the spring than does the average number. Looking over a large number of leading varieties planted out in quantity at Long Ditton, I found A. G. Rowberry, the new orange yellow non-veined variety, to be one of the earliest, and giving most brilliant colour. The variety gets rather loose later, but in the spring it is a splendid bedding variety. Very early, compact, and neat, is Dorothy Foster, flowers white tinted mauve. This is a capital bloomer. Of white ground with a heavy blue edge James Cocker is very early and pleasing. The variety is in its markings very true. The best early plum purple is Lady Diana, an improved Cliveden Purple. Archie Grant seems to be the best blue. A very early and compact flower is Marchioness, but it is uncertain, as many plants have white flowers and others have them flaked with blue.—A.

— **RHODODENDRON INDICUM AMGENUM.**—As a pot plant for the greenhouse this, perhaps better known as Azalea amœna, takes a front place, for outside, however, few people appear to be aware of its full value. It is quite hardy in the southern counties, and further north it does well if given a sheltered place. To grow it really well, cuttings should be rooted in August, and kept in a cold frame for the winter. In spring they should be planted in a cold frame, so that in case of very cold nights, either then or in the following winter, a little protection may be given. The following spring the little plants may be put in the nursery border, from which time covering should cease. In three years from cuttings good sized plants may be had. The colour of the flowers is usually better on plants grown outside than on those indoors. From the profusion of flowers annually produced by this plant, the effect of a large bed in full flower may be easily imagined. Such a bed is now to be seen flowering near the "main entrance" at Kew.—W. D.

— **ISLE OF WIGHT.**—The monthly meeting of the Isle of Wight Horticultural Improvement Association was held at Newport on Saturday last. Dr. J. Groves, B.A., J.P., presided over a good attendance of members, who were present to hear Mr. A. Key, M.A., formerly of Wadham College, Oxford, give an experimental lecture on "Plant Foods: Their Detection in Soils and Vegetables." The lecturer spoke of the importance of gardeners being able to analyse their soils and manures, so that they could most economically purchase manures to give a maximum benefit to the soils and crops. After dealing briefly with the more important plant foods, he performed several experiments showing how to ascertain the presence of phosphates in soils and manures, and that seeds and fruits were exceedingly rich in this important plant food. At the close of a most interesting and instructive lecture, to gardeners in particular, a unanimous vote of thanks was accorded Mr. Key. Mr. Mitchell, Barton Board School, kindly provided the apparatus. Several noteworthy exhibits were staged, including a fine spike of Imantophyllum (Clivia) Lord Wolverton with twenty-three blooms, by Mr. G. Nobbs, gardener to her Majesty at Osborne. A plant of Dendrobium densiflorum was staged by Mr. J. J. Linnington, gardener to Dr. Coombes, Newport; and a well-flowered Hydrangea by Mr. J. Nicholas, gardener to Mrs. Gray, Kintore, Sandown. Eleven new members were elected. The first excursion of the season will take place on May 19th, when Appley Towers and St. John's Vicarage, Ryde, will be visited. The fortnightly meeting of the East Cowes Horticultural Society was held on Wednesday last, Mr. G. Groves, C.C., presiding. Mr. A. Saunders, Stanhope Lodge, Cowes, read a paper on "The Cultivation of Carnations."



ROSE SHOW FIXTURES IN 1898.

- June 15th (Wednesday).—York.*
 „ 16th (Thursday).—Colchester and Isle of Wight (Carisbrook).
 „ 23rd (Thursday).—Bath (N.R.S.) and Ryde.
 „ 25th (Saturday).—Windsor.
 „ 28th (Tuesday).—Leeds,* Southampton,† Sutton, and Westminster (R.H.S.).
 „ 29th (Wednesday).—Canterbury, Croydon, and Richmond (Surrey).
 „ 30th (Thursday).—Eltham, Gloucester, and Norwich.
 July 2nd (Saturday).—Crystal Palace (N.R.S.).
 „ 5th (Tuesday).—Harrow and Hereford.
 „ 6th (Wednesday).—Chelmsford, Ealing, Farningham, Hanley,† Hitchin, Redhill (Reigate), and Tunbridge Wells.
 „ 7th (Thursday).—Woodbridge.
 „ 8th (Friday).—Ulverston.
 „ 9th (Saturday).—Manchester.
 „ 12th (Tuesday).—Wolverhampton.*
 „ 13th (Wednesday).—Ipswich, Maidstone, and Newcastle-on-Tyne.*
 „ 14th (Thursday).—Halifax (N.R.S.), Brentwood, Canterbury (Hospital Fund), and Helensburgh.
 „ 16th (Saturday).—New Brighton.
 „ 21st (Thursday).—Sidcup.
 „ 26th (Tuesday).—Tibshelf.
 „ 28th (Thursday).—Bedale.

* Shows lasting three days. † Shows lasting two days.

The next list of fixtures will appear early in June. In the meantime I shall be glad to receive the dates of any Rose shows (or other horticultural exhibitions where Roses form a leading feature) for insertion in that list.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

PRUNING ROSES UNDER GLASS.

MARÉCHAL NIEL and other Roses growing on wires under glass are benefited by pruning immediately the flowering is over for the season. The long growths of the previous year having furnished a crop of blooms may be shortened back to within a foot of their base. This will cause new wood to break strongly and extend to a considerable length in the course of the season. A closer atmosphere and daily syringing will assist the wood to break sooner than dry and arid surroundings. Later in the season all the air and sun possible must be given to perfect the ripening of the wood thus made.—E. D. S.

SOME OF THE NEWER ROSES.

(Concluded from page 393.)

THROUGH the courtesy of Mr. Frank Cant I have had the opportunity of seeing two quite new Teas. One is Madame René Girard. It is not of the exhibition class, but one of those highly coloured varieties which are so much valued for garden purposes and for cutting. The colour is deep coppery yellow, shaded with what the French call capucine. It originated in the well-known establishment of Guillot at Lyons. Another from the same source is Souvenir de J. B. Guillot, and as I have no doubt that the son wished to honour the memory of his father by giving his name to a good flower, I hope it will be a valuable addition. It is described as bright capucine shaded with crimson. It promises to be one of the brightest flowers of this class, and will be valuable for garden decoration.

Much has been said of the manner in which Hybrid Teas were to take the Rose world by storm, but I do not think that evidences of this are as yet forthcoming. Many of those announced are what we should call "wishy washy" in colour, and others very moderate in growth. Of this last I think we must class Charlotte Gillemot, but opinions vary so much upon this point that some have asked the question whether there are not two Roses sent out under this name. It does not seem to have been very much exhibited; perhaps the season of 1898 may decide as to what position it may occupy in future. The two best flowers in this class are of home origin. Mrs. W. J. Grant, raised by Messrs. A. Dickson and Sons, and Clara Watson, sent out by Mr. George Prince, a clear bright Rose, but hardly full enough for general exhibition purposes. Antoine Rivoire, however, of foreign origin, I think promises well, at any rate as a pot plant it is desirable. I saw a beautiful bloom of it on a plant exhibited by Messrs. Paul & Son at the Drill Hall, and I think rosarians ought to look for it during the ensuing exhibition season. It is of a clear flesh colour, of good imbricated form, with yellow shading at the base, and sometimes flushed with carmine.

Passing on to the Hybrid Perpetuals, it is somewhat remarkable, as I have already said, that for the last few years we have had no addition of any great value from abroad, for Comtesse de Ludre and Duc d'Orleans, which are placed in the catalogue of the N.R.S., are both old varieties. Clio, raised by Messrs. W. Paul & Son, and sent out in 1894, is a good Rose of a pale flesh colour with a deeper centre. Lawrence Allen and Bladud, introduced by Messrs. Cooling & Son, are light coloured Roses; but the most numerous additions have been those which have come from

the Newtownards firm, and some of those in the pink shades of colour are certainly amongst our best new Roses.

Mrs. R. S. Sharman Crawford dates back, it is true, to 1894, but it is a very beautiful Rose, which will run Mrs. John Laing rather closely. Helen Keller, sent out in 1895 by Messrs. Dicksons & Sons, is another of the same series in colour, a rosy cerise; the flowers are large, borne on stiff long footstalks, the form is good, and the habit vigorous; it is one of the best Roses sent out by this firm. Tom Wood, a Rose of 1897, therefore, has not been so much seen as some of the others, but apparently it is a very fine Rose, having many good characteristics. It is vigorous in growth, the flowers are large, globular in form, and the petals of great substance, the colour being a cherry red, or, as some would say, a deep pink. The foliage is remarkably fine, and it is stated by its raiser to be nearly mildew proof. There is yet another from the same source which obtained the gold medal of the N.R.S. in 1897, and will doubtless attract considerable attention in the exhibition season, and we may expect it to be shown in good form by the raisers; but as it is not yet in commerce it will hardly be seen in other growers' stands; but I think Ulster, for that is its name, is likely to be a valuable flower.

There are many who will admire the large Pæony shaped flower sent out by Messrs. Paul & Son of Cheshunt, called Rev. Alan Cheales, a pure lake in colour, very free flowering, and it will be especially valuable as a garden Rose. Waltham Standard (W. Paul & Son) I do not recollect to have seen, but Mr. Benjamin Cant, than whom there is no better judge, speaks of it in very high terms of commendation. He describes it as a brilliant carmine shaded with scarlet and violet, with fine stout petals, similar to A. K. Williams. It is a very tempting description, and it is to be hoped it will be shown well this season.

Finally there is Mrs. Frank Cant, a fine hybrid, being a cross between Baroness Rothschild and Madame Gabriel Luizet, partaking very much of the character of the latter flower, very free, very sweet scented, and very vigorous, and I think destined to be a favourite; it received a reward of merit from the R.H.S., and a card of commendation from the National Rose Society at the Crystal Palace. We may look to see it well exhibited this season.—D., *Deal.*

ACHIMENES IN BASKETS.

AN excellent way of producing a charming effect in the conservatory during the summer months is to grow Achimenes in hanging baskets. It is not necessary to enlarge on the beauty and usefulness of the flower itself, as it is known to everybody, and is generally flowered in pots or pans. They are, however, very suitable for furnishing hanging baskets, whether large or small, and the method of procedure is as follows. Shake out the tubers from the soil in which they have been resting, and place them in small shallow boxes or pans, covering with light soil. This should be done in March or April, and where the plants have made a few inches of growth they are now right for transferring to the moss-lined baskets.

When growth protrudes through the soil Achimenes should be disposed close to the glass to keep them sturdy. The bottom and sides of the wire baskets must be covered with close-growing green moss, but this should be done as planting proceeds. First cover the bottom and place in a little soil, then commence with a row of the small plants arranged horizontally round with stems protruding through the wires of the basket. Cover the balls with soil, build up a little more moss round the sides, and follow with another round of plants. Continue in this way till the basket is sufficiently full, and complete by planting on the surface about 2 or 3 inches apart.

The basket should be thoroughly watered through a rose-can and hung in a shady corner of a warm house till the plants commence growing. Then remove to a light airy position in greenhouse or conservatory, and in July, August and September the masses of bloom will amply repay for the trouble taken.—H.

RHODODENDRON FRAGRANTISSIMUM.

MR. R. FILKINS, gardener to R. B. Berens, Esq., Kevington, St. Mary Cray, Kent, included among specimens of Indian Rhododendrons forwarded for inspection a very handsome truss of the beautiful and sweet R. fragrantissimum. Our correspondent observes that these Rhododendrons are "great favourites at Kevington," and of this we are not surprised, seeing how well the specimens sent were grown, as indicated by both foliage and blooms.

We have no clear record of the origin of this handsome Rhododendron. It is supposed to be the result of a cross between the Sikkim species R. Edgworthi and R. ciliatum, and Mr. F. W. Burbidge in his valuable work, "The Propagation and Improvement of Cultivated Plants," states (page 156), "When the lovely and fragrant Rhododendron Edgworthi first bloomed in this country all were eager to see its beauty and perfume transfused into dwarfier and hardier forms. All my efforts failed where I attempted the cross off R. Edgworthi; but while it would

* William Blackwood & Sons, 1877.

not be brought to bear hybrid seed I had no great difficulty in effecting a cross from its pollen on *R. ciliatum* . . . and singularly just as I had obtained it and I sent blooms to lay before the Committee of the Royal Horticultural Society, Messrs. Veitch anticipated me in having a

these *Rhododendrons* prior to the date mentioned ; indeed, we find on page 160 of his work above mentioned, that he was using pollen from his cross on *R. virgatum* in 1864. If he had many pods equally fecund with one he mentions, as containing 324 fine seeds, he raised many seedlings.



FIG. 80.—RHODODENDRON FRAGRANTISSIMUM.

plant of this cross exhibited before that Committee, which is now well known and generally cultivated under the name of Princess Alice."

Mr. Burbidge does not say when he first effected the cross, or when his seedling bloomed, but it is recorded that Messrs. Rollison were awarded a first-class certificate for *Rhododendron fragrantissimum* on April 21st, 1868. The flowers are described as large and beautiful, white faintly stained with rose. Mr. Burbidge was presumably working on

Did some of these from his earlier crosses find their way to Tooting ? Be this as it may, *R. fragrantissimum* as grown by Mr. Filkins, must add greatly to the beauty and sweetness of the conservatory at this period of the year.

The flowers sent were if anything better than represented in the illustration (fig. 80), and as seen pure white, though they are sometimes faintly tinged with rose. When the shrubs get too large for

their positions, or when small plants are required, they can be raised from cuttings, also by grafting and inarching. Cuttings of young shoots when the base close to the old wood is getting firm, inserted in silver sand, kept close and moist in a cool frame for ten days, then plunged in gentle bottom heat, emit roots. When two years clean stemmed seedlings from *R. ponticum* or any other varieties are established in pots, they may be side grafted with scions of desired varieties in August or September, keeping them close, moist, and shaded in a pit, not cutting down the stocks till the union is effected. Saddle grafting also answers in heat in the spring. Inarching may be done at any time during the summer. This is a sure method of increase where stocks can be conveniently arranged for the operation.

HARDY FLOWERS IN OTHER GARDENS.

THOSE who are content to admire their own gardens without seeing those of others lose much. Such is human nature that we are apt to think our own flowers perfect of their kind, and thus fall into the error of resting content with what we have without striving to master more perfectly their wants and ways. We miss, too, the actual observation of new flowers we hear of but have not seen, and are not only prevented from cultivating plants of great beauty, but are often led to grow flowers which we would not have procured had we seen them in bloom. We see happier combinations and better effects than we have thought of, and thus our gardens are less perfect than we can make them.

Not least is the loss of the acquaintanceship of other flower lovers, men and women of various stations in life, but all imbued with the taste for flowers in which we can find a common meeting ground. It is unfortunate that gardeners are, by reason of the pressure of work in spring, prevented from more frequent exercise of the privilege of seeing other places, and thus of acquainting themselves with the rich supply of early flowers; but the owners of gardens might more frequently avail themselves of the opportunity of seeing gardens other than their own in the sweet springtime or in early summer. This much by way of introduction to a few notes on gardens recently seen and the flowers they contain.

First must come the Royal Botanical Gardens of Edinburgh, of the rich collection of plants in which I have before spoken. Mid-April is too early to see these at their best, so much later are flowers there than further south. Thus the reference to this garden must at present be briefer than it deserves, and is rendered still less worthy because of the incessant rain which fell during my stay.

Many changes have been made in those gardens of late, and still others are in progress under the directions of Professor Bayley Balfour. Changes are not always improvements, but the alterations lately made show that the Edinburgh gardens are increasingly becoming more worthy of the Scottish capital, and that they will afford still greater inducements for a visit from those interested in plant life. The hitherto inadequate houses have been improved and largely added to; the arrangement of hardy plants for the study of botany has been remodelled; the rock garden, so prominent and attractive a feature, has been taken in hand; and, in brief, a general overhaul has been, and still is, in progress, which cannot fail to add to the value of the institution. In the beds in front of the houses but few plants were in flower. Several *Doronicums*, such as *caucasicum*, *austriacum*, and *Harpur Crewe*, were in bloom, their golden flowers lighting up the places where they grew despite the general gloom caused by the constant downpour. Here also was observed a neat little *Valerian* coming into bloom, which from its dwarf and neat habit looked as if it might be an acquisition. It was *Valeriana tripteris* (Linnaeus), a European species which I may have seen before, but of which I have no recollection. It is about 9 inches high.

In another bed was *Tulipa Schrenki*, referred by the Kew Index to *T. Gesneriana*. Of dwarf habit, large size, and bright colour, this Tulip is worthy of note. It was too early to see much in flower among the shrubs, but in a short time a magnificent effect would be produced by the *Rhododendrons*. A few were in bloom, and I took a note of a pretty white one of dwarfish habit—*R. anthopogon* (Don)—as of value for small gardens, or in places where dwarf shrubs are sought after. The rock garden has for many years been well known as possessing a very fine collection of Alpine flowers. Its construction has been often criticised, but it is doubtful if many rock gardens more picturesque in effect are as suitable for the welfare of the plants, which is, of course, the principal thing required in such an establishment.

Among the plants in flower were several *Drabas*. It may be said of these that there is much confusion in the nomenclature, and little difference between several of the so-called species. The yellow *Drabas* seen were very effective, and a note was taken of two white species—*D. stellata* and *D. fladnizensis*, as being as good as any of the colour in bloom. *Alyssum Wierzebecki*, a white Madwort, was also in flower. Much prettier, however, was the favourite little Candytuft—*Iberis saxatilis*, whose dwarf, somewhat trailing habit, and heads of white flowers make it of much value. This is the plant I have always known by the above name, and not apparently one mentioned by a contemporary, as on view in the Alpine house at Kew, which differs from the plant usually known as *I. saxatilis*. Is not the Kew plant one known as Little Gem, a variety of *I. sempervirens*?

Nothing gave me more pleasure than several clumps of *Narcissus cyclaminens*. On one of these I saw quite a dozen of the fine yellow-

coloured quaint flowers on healthy plants. *Erythronium grandiflorum* was only in bud. There is a large collection of *Saxifrages*, of many species and forms. *S. Boydi* was very bright with its yellow flowers, and deserving of mention is *S. Salomoni*, a new hybrid Rockfoil, with white flowers, much resembling those of *S. Boydi alba*, but with different foliage. This is, to all appearance, a plant worth growing.

A special feature is the large collection of *Primula* species. Remarkably fine were the trusses on some of the plants of the beautiful pure white *P. viscosa nivalis*. These were finer than any I have seen this season, and formed a delightfully attractive object. The typical *P. viscosa* was also seen with *P. v. decora*, *P. pubescens*, *P. venusta*, *P. obovata*, *P. frondosa*, and many others, including the blue Primrose, now so popular. Even earlier than with us in the south was *Trillium sessile* and *Anemone patens*, the flowers of the latter being of especially good size.

In the pond one could see flowers of the well-known *Aponogeton distachyon*, and by its margin several bog-loving *Primulas* and *Helonias bullata*, the latter being in splendid condition—finer, indeed, than I have seen it anywhere else. At this stage, however, the rain became too much for me, and only time remained before another appointment for a run through the new houses, which are admirably adapted for their purpose, and contain some splendidly grown and attractive plants. Later in the season I hope to visit the Edinburgh Royal Botanical Gardens under more favourable conditions.—S. ARNOTT.

(To be continued.)

AUTUMN VERSUS SPRING DIGGING.

"A MARKET GROWER" seeks to found an argument in connection with this somewhat important matter on insufficient, and indeed an unstable basis. How often has it not happened that the soil has been hard, dry, and difficult to work in the autumn, and easy to dig in the spring. So much depends on the nature of the season, and that is so variable that it is difficult to draw from such data at any one season exact conclusions. Now the land in question is heavy and difficult. I had to work just such land in Middlesex for twenty years, a piece of stiff clay, at times quite heart-breaking to work, and it was my sad experience that, five seasons out of six, if I had portions dug during the winter to accelerate the work of sowing and planting in the spring, that rains would saturate the dug soil, convert it into the consistency of prepared brick clay, then it would bake hard, and sometimes portions would be too hard to be planted at all.

In the majority of cases I found it better to allow the ground to remain untouched till the spring, as then if heavy rains fell during the winter the moisture did not hang in the soil, but passed rapidly through the holes or drains made in it by worms and plant roots. Of course it was needful to put on more labour to get digging done in the spring, but was the lesser evil of the two. It was not needful for me to grow winter crops, but a market gardener must of necessity do so if his labours are to be profitable, and in such case it would be bad gardening to have a large area of ground lying bare or fallow during the winter when it should have been carrying crops of Cabbages, Winter Greens, Broccolis, Spinach, Onions, Turnips, and similar vegetables, or failing these Rye and Tares to cut for horses, or Winter Oats, or indeed any description of green crop to dig or plough in as a green manure.

Of course light porous or sandy soils present few difficulties, and may be dug almost at any time with ease. Taking soils generally, however, and especially where cropped to give the owner a livelihood, a greater consideration inevitably is, under which conditions will the soil give most profit, and be the most productive—by lying entirely fallow, or by carrying a green winter crop? Without doubt the best results come from the latter, that is, if both the teachings of science and experience go for anything. Soil that is lying absolutely uncropped is assumed to be resting and recuperating. That is an exploded theory. Soil gains nothing by resting, but much by recuperating, and that can only be so when it is either carrying a crop to be buried into it as manure, or is recruited by having a dressing of manure or plant food applied.

If, therefore, there be no profit resulting from absolutely "resting" soil, to use a current term, there is no wisdom in allowing it to lie entirely idle, and any description of crop sown on to it in the autumn in time to enable growth to be made prior to the setting in of hard weather is productive of real profit. No doubt the best form of crop is one of Tares; but those of Rye, Oats, Mustard, or Turnips are much better than none. Such a dressing of manure as these catch crops give costs little, and is immediately available for the succeeding crop, as decomposition is rapid, the constituents of the plants being tender and sappy, and not woody, needing much time to become soluble or decomposed, as is the case with dry fibre like straw. All the same, it is surprising how little relatively green manuring of this nature is practised in gardens where it would prove to be profitable.—A. D.

FRENCH BEANS FOR FORCING.—It is probable that few vegetables are more highly appreciated early in the year than French Beans of good quality. Hence any addition that is of decided merit is much appreciated. A new variety raised by Mr. G. Wythes of Syon House promises to be excellent. It is named Wythes' Improved Mohawk, and as shown amongst others by the raiser is very fine. The pods are above average size, freely produced, crisp, and of excellent flavour. It is an advance on the old Mohawk, and is a splendid forcer. The habit of the plant is such as makes it in every respect desirable for culture in pots or boxes.—OBSERVER.



SALE OF ORCHIDS AT WALTON GRANGE.

MESSRS. PROTHEROE & MORRIS completed their sale of Orchids at Walton Grange, Stone, Staffordshire, on Thursday. The following are some examples of the prices realised:—*Cattleya Victoria Reginae*, 44 guineas; *Odontoglossum crispum Alfred*, 34 guineas; *Odontoglossum crispum Golden Queen*, 160 guineas; *Cypripedium Dorothy*, 21 guineas; *Odontoglossum crispum aureum*, 140 guineas; *Odontoglossum Ruckerianum ocellatum*, 50 guineas; *Odontoglossum Wilckeanum nobilior*, 33 guineas; *Odontoglossum meleagris*, 35 guineas; *O. crispum Stevensi*, 110 guineas; *O. Coradinei expansum*, 25 guineas; *Cattleya labiata coerulescens*, 28 guineas; *C. l. Peetersi superba*, 75 guineas; *C. Skinneri alba*, 30 guineas; and *Odontoglossum excellens Thomsoni*, 140 guineas.

ODONTOGLOSSUM CITROSMUM.

It is not often one sees twin spikes on this pretty Orchid, but we have a plant with two from the same lead. Each spike is fully developed, and occurs quite separately from the base, no fusing or fasciation being present. It is one of the most useful Orchids now flowering, and very popular. It is not difficult to grow; few are easier, in fact, but special treatment is necessary to induce it to flower. After the growth is fully made and the bulbs are ripened keep the roots perfectly dry until the tips of the flower spikes can be seen in the young growth. Then give a thorough soaking of water, and the spikes will form and lengthen very rapidly.

It should be grown in a rather higher temperature than the *crispum* and similar sections of the genus, and baskets are preferable to pots on account of the pendant flower racemes. There are several beautiful varieties, the type being white with a yellow crest to the lip, the variety *roseum* having a bright rose lip, and *punctatum* being thickly spotted with rosy purple on each segment. Peat and moss, with plenty of charcoal or potsherds intermixed, will grow it well, and it must be disturbed as little as possible when rebasketing.—H. R. R.

ORCHIDS AT BUSH HILL PARK NURSERIES.

MESSRS. HUGH LOW & Co. have now transferred the last of their collection of Orchids from the familiar nurseries at Clapton to their larger premises at Bush Hill Park, near Enfield, where the plants have more light and purer air. The *Phalenopsis* were removed last February, and they do not appear to have suffered by the journey and change of quarters. The house provided for them has a double span roof, with staging in the centres and at the sides. Large lumps of burnt ballast lay under the stages and by the side of the paths, and this being damped frequently causes a moist atmosphere, which is so necessary to the successful cultivation of these plants. A very distinct form of *P. amabilis* is flowering. It has a beautifully rose-coloured lip, and a band of similar colour in the middle of the petals. It is to be known as *P. a. Kinleside's variety*. *P. leucorrhoda*, *P. Sanderiana*, and *P. Stuartiana* are also in bloom. In the next house *Dendrobiums* are growing vigorously, suspended from the roof over beds of moist leaves and sphagnum moss. At the end of these houses are healthy plants of *Vanda Miss Joachim*, which was illustrated in the Journal on December 9th of last year.

Cypripediums occupy several large houses, in one of which there are many choice species, hybrids, and unflowered seedlings. *Gertrude Hollington* is represented by a large plant in flower, and healthy specimens of *Mastersianum*, *Curtisi*, and *ciliolare* are in bloom, while other houses are filled with *Lawreanum*, *Dayanum*, *Spicerianum*, and others. The *Odontoglossum* houses are each 180 feet in length, and connected at one end by a cool shady corridor, in which is rockwork, adorned with flowering plants of *Ada aurantiaca*, *Oncidium Marshallianum*, *macranthum*, and *undulatum*, with numerous *Odontoglossums* and some *Lycastes*. From the roof are suspended *Sophranites grandiflora*, *Oncidium concolor*, and *Cattleya citrina*, making a charming combination of colour. This portion being rather new, it will be more attractive when the bareness of the stone is relieved with trailing and foliage plants. There is a grand display of *Odontoglossums*, chiefly of varieties of *crispum*, *Pescatorei*, *triumphans*, *cirrhosum*, and *Coradinei*, with a splendid collection of *Dendrobium Jamesianum*.

The structures for *Cattleyas* are on similar lines to the preceding, but are of course warmer. They are effectively furnished with plants of trailing habit, as well as Ferns, Palms, choice *Cattleyas*, *Lælias*,

Lælio-Cattleyas, *Oncidiums*, *Phaius Cooksoni*, large plants of *Calanthe veratrifolia*, *Cymbidium Lowianum*, and *C. l. concolor*. There is a distinct *Cattleya* unnamed, and suggestive of a hybrid between *C. intermedia* and *C. Loddigesi*, with the lip of the former, but much deeper in colour, while the shape resembles the last named. This was shown at the Drill Hall on the 10th inst., and received an award of merit. As there is no dividing wall beneath the stages in this block of houses, there is a circulation of air continually throughout. Two large concrete tanks pass through each division, one being used for rain water, and the other for water pumped up from wells in the nursery, which on account of its hardness is only used for damping the floors and stages. A few *Gaskelliana*, *Schrödera*, *speciosissima*, and *Trianae* are still in bloom, but the wealth of flower is amongst *Mendeli* and *Mossiae*, with *Lælia purpurata*. The plants appear to have grown and matured uncommonly well, especially *Cattleya Mossiae*.

The *Cattleyas* have been grown at Bush Hill Park for some time past, many of them having been established there, and are now flowering for the first time. From these and others of proved merit Messrs. H. Low & Co. will be able to maintain their reputation at the forthcoming Temple Show. Mr. T'Anson has the management of the Orchid department, and to him a word of praise is due for the clean and healthy state of the plants under his care. Other large houses are in course of erection, and there are features of interest in the construction of these which may be worth recording when completed.

In the older portion of the nursery are thousands of Palms, Ferns, New Holland plants, Crotons, and other fine-foliage plants, Azaleas, Pelargoniums, Carnations, pot Roses, and Vines. Beyond the houses are about 40 acres of ground devoted to hardy fruit and Roses, for the culture of which the soil is admirably adapted.—G. W. CUMMINS, Wallington.

AUSTRALIAN MEDICINAL PLANTS.

AUSTRALIA is rich in plants reputed to possess medicinal virtues, although at present only a few have been utilised, and these but to a limited extent. In New South Wales such plants are abundant, many kinds being found in the immediate vicinity of Sydney, especially in the Parramatta district.

One of the most common is the wild Pennyroyal, a decoction of which is largely used as a tonic. A valuable oil can be extracted from it, which may be employed both as a medicine and as a means of imparting a pleasant odour and flavour to other ingredients. Two little plants of the Gentian family, plentiful enough in the spring, have proved highly efficacious in certain stages of dysentery. The common native Raspberry, like other species of *Rubus*, possesses astringent properties which may one day secure it a place in the colonial pharmacopœia, which already includes the native *Sarsaparilla*, although, notwithstanding the latter abounds in the neighbourhood of Sydney, the bulk of the *Sarsaparilla* used by colonial chemists is imported. The country people frequently prepare an agreeable and wholesome tonic from the native plant, which costs nothing save the trouble of collecting it. It is also known by the name of Sweet Tea or Wild Liquorice.

There is also a native Laurel, allied to the *Sassafras* of the pharmacopœia, which possesses medicinal properties as yet but little understood. The native Grape yields a rich crimson jelly, said, when used as a gargle, to be good for sore throat. The native *Veronica* possesses properties in common with the European species, and the leaves are frequently used for making herb tea. Self-heal is plentiful and indigenous, as in Europe; it is bitter and astringent, and occasionally used as a substitute for bark. The leaves, in England, are supposed to be efficacious in healing cuts hence the name. The different species of native Currant possess a powerful acid, capable of being used for flavouring sugar drops, or employed as a substitute for lemon syrup.

The Thorn Apple, Castor-oil Plant, Pimpernel, American Nightshade, Fennel, Wart-wort, and other plants differ very slightly, if at all, from those found in other countries. The Castor-oil Plant not only yields the well-known oil, but the leaves have been successfully employed as a galactopoietic, for remedying the absence of milk in the maternal breast. The Thorn Apple is used as a cure for asthma, the seeds, when expressed and made into an ointment with lard, being good for irritable ulcers, burns, and scalds. The American Nightshade is useful as a purgative; and the Pimpernel is employed in mania and hydrophobia; the juice, when applied to the eye in certain stages of ophthalmia, having the property of cleansing it in a remarkable manner. The medicinal virtues of the various kinds of Eucalypti, or Gum Trees, have become universally recognised, but it is not so generally known that they are shared also by the different species of Tea Tree and Wattle. The flowers of the native *Pittosporum* yield a Jasmine-like scent by distillation; and the Boron and other Rutaceous plants abound in volatile oils.

The foregoing are only a few of the many Australian native plants known to possess medicinal properties, and their luxuriant abundance during the greater portion of the year, combined with the ease with which many species can be cultivated in suitable localities, will, at some future date, give them considerable industrial value.—J. PLUMMER, Sydney, N.S.W.

A PLETHORA OF SLUGS.

THE plethora of gardeners and other subjects have recently been brought prominently to the front by able contributors of the Journal, but apparently no one seems to have found time to advert to the great abundance of slugs, their damage to garden crops, and the best means of combating them. This garden for many years has had an acknowledged partiality for slugs, but why it is so, seems to me difficult to understand. It has been often suggested that lime fresh from the kiln is the one great and unfailing remedy, and I have acted on the suggestion, with a hope that some measure of relief would be afforded. This, however, has not been realised to any appreciable extent, and my faith in the virtues lime possesses in ridding the soil of slugs has been shaken.

The winter being so mild no doubt gave them a chance to carry on their egg production without hindrance. The seed beds suffered in like proportion to that of other portions of the garden, the young plants disappearing as if by magic, lime and soot availing nothing. I am now applying salt in small quantities to the ground where lime has failed, and with this not much better success seems to be forthcoming. Indoors the same trouble has been prevalent, although not to the same extent as outdoors, small slugs or their unhatched eggs being introduced with the new soil, keeping up a succession of losses among tender seedlings and new growth in plants. Night searches by lamplight have had to be instituted and maintained in the latter case to protect plant growth from their ravages.

Mr. Abbey would, I am sure, be able to afford much valuable information with reference to the use of gas lime as a slugicide. I greatly fear that, applied as generally advised in the winter months and left exposed to the weather until its deleterious properties were evaporated, it would not prove equal to the destruction of slugs in the spring. I have found that a light sprinkling of nitrate of soda destroyed a quantity, but this could not be generally employed for the purpose of ridding the ground of slugs. It is strange that, whatever is used, including nitrate, what proves efficacious one season may not do so in another. Of course when there are frequent showers no application can long remain in a useful state as a deterrent to slugs or anything else, and this fact tends to the advantage of the slugs in their egg-production and hatching of the young.

The large earthworm is a great friend of the slug in providing burrows, into which these can find a ready shelter. A frequent use of the Dutch hoe checks their passage somewhat, but nothing one can do is better than deep digging or trenching for destroying slugs. When deeply buried they, like all other animal life deprived of air, must succumb. Close and continuous cropping supports the slug too, for this affords them food at all times without much effort on their part.—W. S., Rood Ashton.

THE VAGARIES OF PRIMROSES.

I WAS much interested by "A. D.'s" notes on this subject, page 405, and now take this opportunity of thanking him for his various jottings. It is apparently a practice of his (and a good one) to make a note of what he finds worthy, and send it to the *Journal of Horticulture*. Seven years ago three roots of the common Primrose (*Primula acaulis*) were planted in my flower garden on the north side of the residence. The following year every one of these plants bore rosy lilac flowers, and so they continued to the present year, when they became much deeper in colour. Not a single "primrose"-coloured flower has been produced by these plants in the six years of their flowering since they were transferred from a hedgebank to the site named. The soil is a calcareous gravelly loam over chalk. They were taken from a clayey loam with chalk at a far greater distance from the surface. The gravelly loam has a red substratum with flints over the chalk, and this, rightly or wrongly, was assumed to be the cause of the changed colour.

The three plants produced a number of seed pods the first year, and many seedlings sprang up the second year. They flowered during the third, and in the bordering or edging of flints on bare soil they all gave rosy lilac flowers, but some of a deeper shade than the parents. On the north of the flower bed, and on the east side also, is a piece of grass 2 feet wide, for it is little use having flowers close to road palings, and on this grass plot the Primroses have found a home. They are seedlings from the same parent plants, and every one bears "primrose" flowers, while those in the soil edging are every one rosy lilac. I attribute this return to the Primrose of the grassy glade to their having a home-like medium, and I am charmed with their rebellion against culture.

I planted Cowslips too, but the three principals are dead. They hate bare soil; but instead of them, and as the result of their influence, I have Oxlips, a cross between the Primrose and the Cowslip, which not unfrequently occurs wild in Britain in company with its two parents, *Primula vulgaris* or common Primrose, and *P. officinalis* or Cowslip, and marks the development of the latter into the Polyanthus (*P. variabilis*), the hybrid in question being a natural one, the *P. variabilis* of Goupil. The flowers are reddish, with deep golden markings, and some of the seedlings are developing the gold-laced type. Not one is an Oxlip proper (*P. elatior*), all being coloured instead of yellow, and the size is that of the Cowslip.

The foregoing may interest "A. D." and others. No manure has been applied to the plants in the seven years, so no change could take place by chemical action. All has been done by Nature and the bees. I cut the grass so as to save the leafage of the Primroses and the Cowslips. Double Daisies planted in the turf have seeded and brought back the common Daisy (*Bellis perennis*). I consider them charming—the bit of

turf with its Primroses, Cowslips, and Daisies under one's eyes—the country in town.

I have also some wild Heartsease (*Viola tricolor*). The flowers get larger year by year, and they are varying much in colour—some selfs and others parti-coloured, some with fringed edges, some also as smooth as show Violas. I only once saw "A. D." about thirty years ago, and then he was preparing frames for Violas, and putting in cuttings at his late brother's place at Shipley, Yorks. The reference to Primroses and Violas has brought the visit to mind. But I must stop, though I may perhaps again venture a few lines on my patch of country in town.—ST. ALBANS.

I COULD have told "A. D." the distinction that exists between a Primrose and a Polyanthus, fifty years ago; but on the same principle that while a mare is a horse a horse is not a mare, so a Polyanthus is a Primrose, but a Primrose is not a Polyanthus. I have seen plants raised from Primrose seed with as many trusses on them as solitary flowers on single stems. What would "A. D." call this? A Primroseanthus, perhaps. The fact that Mr. Arnott gave the variety "John Wilkinson" such a high character after the plant had travelled two journeys by parcels post of over 300 miles each perfectly justifies me in making what "A. D." calls a "fuss" about it. Every reader knows that a pin-eyed flower is just as good for garden decoration as a flower with a thrum eye. There is another eye I like less than the pin eye; happily it is not in the flowers—it is a prejudiced eye. Sometimes it is found in those who worship at "Flora's shrine." "A. D." seems to have an eye of his own—a sharp pen eye—but he will not deter me from sending notes of anything I may think will be of interest or service to the readers of the Journal. I have received much benefit myself from such notes, and often from "A. D.'s" pen. I would have liked very much indeed to have seen the grand show of Polyanthus referred to at Farnham, but there is just a possibility, as the Scotchman said, that the variety "John Wilkinson" is as good, or it might even be better, than any of them. Merit is not always found in multitudes.—N. N.

CYCLOBOTHA AMÆNA.

THE delicate beauty of many of the Cyclobottha and of the Calochorti, to which they are nearly allied, is well known, and yet they do not receive a great amount of attention. Old varieties are frequently shown at the Drill Hall, especially by Messrs. R. Wallace & Co., while new ones are occasionally sent by this firm and others. They invariably come in for a large share of admiration, and though their popularity is doubtless on the increase, they deserve still further attention. A charming form is *C. amœna* (fig. 81) of which the flowers are of a pale rosy mauve shade, with three dark blotches in the centre of each. The sepals and petals are rather long and narrow, the latter being twisted, and they are hirsute. The anthers are white, making the flower more conspicuous.

HORTICULTURAL SHOWS.

NATIONAL TULIP SOCIETY.—MAY 11TH.

IT was most unfortunate that the date of the show in the Royal Botanic Gardens was fixed so early, and though an attempt at postponement was made it was found to be impracticable. As the day was quite a week too soon for Tulip blooms several members of the Society were unable to stage any flowers, Mr. J. T. Bennett-Poë and Mr. G. Edom being unrepresented, whilst Mr. Bentley could only bring very few, and found himself unable to compete for the championship in Class A; no fault, however, could be found with those he exhibited. Messrs. Barr and Son showed blooms of first-rate quality, but unfortunately several were badly damaged by hailstones. In Class A, for instance, their flowers were clearly of the best quality; but both Messrs. Chater and Hall were able to stage fresh and undamaged specimens.

The season has been rather a cruel one for the Tulip, and the death-dealing hailstorm too often in evidence. As a result the glory and brightness of the bloom were much diminished. Feathered flowers were very scarce, and of only medium quality. Industry, a fine rose, though very young, shown by Messrs. Barr; and a byblœmen, John Linton, shown by Mr. Chater, very much like Adonis, but we are informed of different habit, were very conspicuous. The example of Samuel Barlow, as seen in Mr. Chater's stand of twelve, Class A, was very rich and brilliant, the marking being fine, the feathering especially so, and quite deserved the premier prize, even though a very fine Paxton and a good Talisman were in close competition. It is seldom indeed that Sir Joseph Paxton can be dethroned from premier honours, but Samuel Barlow is worthy of the succession; its cup is better, its petal much broader and of better shape, though it is rather of the red and orange colours, than the much desired black and yellow that Paxton so nearly approaches. We fear, however, that whilst we have hundreds of Paxtons, we may only have units of Barlows. Paxton will still be unique for quality and quantity combined. Goldfinder (originally from the late Mr. Barlow's collection), a beautiful flower, exhibited by Messrs. Barr and Sons in Class E, was awarded premier honours for breeders.

Class A.—Twelve dissimilar Tulips, rectified, two feathered and two flamed of each class. First prize, Mr. A. Chater, Cambridge, with

bybloemens Duchess of Sutherland and Mrs. Jackson flamed, John Linton and Guido feathered; roses: Sarah Headley and Glory of Stapleford flamed, Sarah Headley and Modesty feathered; bizarres: Samuel Barlow (premier flamed) and Orion flamed, Masterpiece and Richard Headley feathered. Second prize, Mr. A. D. Hall, Wye, with bybloemens Coningsby Castle and Duchess of Sutherland flamed, Adonis and Bessie feathered; roses: Aglaia and Annie McGregor flamed, Miss Edwards and Count feathered; bizarres: Richard Yates and Sir Joseph Paxton flamed, Duke of Devonshire and Masterpiece feathered. Third prize, Mr. C. W. Needham, Royton, Manchester, with bybloemens Duchess of Sutherland and Talisman flamed, Nellie Hughes and Universe feathered; roses: Aglaia and Mabel flamed, Modesty and Lloyd's 214 (a new break) feathered; bizarres: Sir Joseph Paxton and Dr. Hardy flamed, Sir Joseph Paxton and Lord Lilford feathered. Fourth, Messrs. Barr & Sons, Covent Garden, with bybloemen Amazon and Duchess of Sutherland flamed, Mrs. Jackson and Friar Tuck feathered; roses: Aglaia and Mabel flamed, Industry (premier feathered) and Lady Grosvenor feathered; bizarres: Sir Joseph Paxton and Samuel Barlow flamed, Samuel Barlow and Lord Lilford feathered.

Class B.—Six dissimilar Tulips, one feathered and one flamed in each class. First prize, Mr. J. W. Bentley, Middleton, Manchester, with Adonis, Annie McGregor, and Lord Stanley flamed; Bessie, Count, and Wm. Wilson feathered. Second, Mr. A. Chater with Duchess of Sutherland, Sarah Headley, and Dr. Hutcheon flamed; John Linton, Modesty, and Masterpiece feathered. Third, Mr. C. W. Needham with Duchess of Sutherland, Aglaia, and Dr. Hardy flamed; Sarah, Modesty, and Masterpiece feathered.

Class E.—Three flamed Tulips. First, Mr. Bentley, with Universe, Mabel, and Lord Stanley. Second, Mr. Needham, with Mrs. Jackson, Mabel, and Samuel Barlow. Third, Mr. Chater, with Duchess of Sutherland, Annie McGregor, and Sir Jos. Paxton.

Class F.—Six breeder Tulips, two of each section. First, Mr. A. D. Hall, with bybloemens Glory of Stakehill and Lloyd's 200; roses, Mabel and Annie McGregor; bizarres, John Heap and Excelsior. Second, Messrs. Barr & Sons, with Miss Foster and Talisman, bybloemen; Lady Grosvenor and Mabel, roses; Samuel Barlow and Goldfinder, bizarres. Third, Mr. J. W. Bentley, with Janette and Adonis, bybloemens; Queen of England and Mabel, roses; Excelsior and Storer's Seedling, bizarres.

Class G.—Three breeder Tulips, one of each section. First, Mr. Bentley, with Glory of Stakehill, Mabel, and Storer's Seedling. Second, Mr. Needham, with Adonis, Annie McGregor, and Wm. Lea.

Class H.—The Samuel Barlow prizes for pairs of Tulips, one feathered and one flamed, of any class. First, Mr. Bentley, with Duke of Devonshire feathered, San Jose flamed. Second, Mr. A. D. Hall, with Count feathered, and Sir Joseph Paxton flamed.

Class I.—Premier flamed Tulip, Mr. Chater for his Samuel Barlow, a noble bloom in class A. Premier feathered Tulip, Messrs. Barr & Sons, for Industry, an excellent clean feather, exhibited in class A. Premier breeder Tulip, Messrs. Barr & Sons, for Goldfinder, exhibited in class F, a very bright, attractive flower.

Class J.—Collections of English Florists' Tulips. The gold medal was awarded to Messrs. Barr & Sons for their fine and extensive exhibit.

The large silver medal of the Royal Botanic Society was awarded to Messrs. Barr & Sons for their magnificent group of decorative Tulips, Darwin and others, exhibited in the large tent.

The afternoon was sunny, but not warm, or the Tulips might have shown to better advantage.—C. W. N.

ALEXANDRA PALACE.—MAY 18TH, 19TH AND 20TH.

THE first flower show since the re-opening of the Alexandra Palace cannot be recorded as a great success. No doubt the date fixed was somewhat unsuitable, owing to the close proximity of the Temple and Manchester shows. At the same time there should be sufficient material in the immediate neighbourhood to supply a better competition. It is an ideal place for a floral exhibition, the hall being very spacious and well lighted. On this occasion the competition was very weak, though the individual exhibits were in every way satisfactory. It is to be hoped future exhibitions will be more largely patronised, both by the trade and other growers.

Messrs. J. Peed & Sons, West Norwood, were awarded the first prize for a group of flowering and foliage plants, arranged in circular form. It was composed of Palms, Dracænas, Caladiums, Ericas, Begonias, Ferns, and Grasses. The plants were excellent, though a little more artistic arrangement appeared wanting. Mr. Geo. Cragg, gardener to W. C. Walker, Esq., Winchmore Hill, was placed first for a group of Orchids tastefully arranged with Palms, Ferns, and Caladiums. The Orchids were composed chiefly of Cypripediums, Cattleyas Schröderæ and Skinneri, Odontoglossums crispum and Andersonianum, Oncidium and Dendrobiums, the whole forming a very attractive exhibit.

Messrs. J. Peed & Sons were the only exhibitors in a class for nine foliage plants with medium specimens. The best were Kentia Belmoreana, Latania borbonica, Phormium tenax, Kentia Fosteriana, Dracæna Gladstonei, Croton Weismanni, and Dracæna Lindenii. Messrs. Paul & Sons, Cheshunt, secured premier honours in the large class for hardy flowers, making an extensive exhibit. The bunches of Azalea mollis in their various hues were very attractive. Rhododendrons were also a special feature. Parrot Tulips, Pæonies, Adonis vernalis, Geums, Megaseas, and Scillas all contributed to make up the display.

Mr. Amos Perry, Winchmore Hill, was awarded first prize for a collection of hardy flowers. The chief were Geum Heldreichi, Trollium americanus, Irises in variety, Lilliums davuricum and Harrisii, Tulips of

the gesneriana type, and Phloxes. The whole made a very pleasing display. Mr. Geo. Cragg was placed first for twenty-four bunches of cut flowers. There were Cannas, Lælia grandis teubrosa, Dendrobiums, Cattleya Mendeli, and Cymbidium Lowianum, while the hardy kinds were Cytisus albus, Trollius europæus, Doronicum Harper Crewe, Tulip Golden Eagle, and Irises.

The Canterbury Roses were the only representatives of the queen of flowers. Mr. Geo. Mount was deservedly awarded the first prize for twenty-four blooms with very fresh specimens; Mrs. John Laing, Bridesmaid, La France, Catherine Mermet, Caroline Testout, Gustave Piganeau, and Mrs. W. J. Grant were the best flowers. The same exhibitor was again placed first in the class for twelve blooms with equally fine flowers. Messrs. Perkins & Sons, Coventry, gained premier



FIG. 81.—CYCLOBOTRYA AMENA.

honours for bouquets, executed in their well known style. Mr. H. O. Garford, Stoke Newington, was second; and Mr. L. H. Calcutt, Stoke Newington, third.

Messrs. Wm. Cutbush & Son, Highgate, had a very fine group of foliage and flowering plants. The former consisted of Palms in variety, Bambusas, Ferns, and Grasses. The flowering plants were represented by excellent Carnations, including Princess of Wales and Princess May; Azaleas and Ericas, and a variety of spring flowering plants (gold medal). Mr. Thos. S. Ware, Tottenham, staged a large collection of hardy plants and flowers, composed of Tulips, Irises, Narcissi, Trolliums, and Doronicums amongst others. The plants were represented by Ranunculus speciosus, Geum Heldreichi, Orchis fusca, Ramondia pyrenaica, Primula involucrata, and Epimedium macranthum (gold medal).

Mr. S. Mortimer, Rowledge, Farnham, staged a good exhibit of twenty boxes of Cucumbers and Tomatoes. Sutton's A1, Rochford Market, Sutton's Peerless, and Improved Telegraph were most notable in the former section, while the latter was represented by well-grown and coloured fruits of Mitchell's Hybrid, Abundance, and Improved Conqueror (gold medal). Messrs. Wood & Sons, Wood Green, had one of their well-known displays of horticultural sundries, composed of a variety of things required daily in the garden.

A CALL AT WILLIAMS'.

It is probably very rare to find a horticulturist go to Holloway or its immediate neighbourhood without making a call at the Victoria and Paradise Nurseries of Messrs. B. S. Williams & Son, and it is certain that something will be found to repay the visit. It will not be long ere, to see the whole of the firm's stock, the journey will have to be extended as far as Finchley, where several acres of land have been acquired, as was briefly noted in the last issue of the Journal. The advantages of such a secondary establishment to a nursery business will be apparent to all who are conversant with the difficulties that have to be surmounted when growing plants in London. It may be said that Holloway is blessed with a pure atmosphere, but such is not the case, for smoke and fogs are far too abundant, and there will doubtless be quite sufficient at Finchley, where, as a rule, the air is purer and more bracing than it is closer to the metropolis.

However, much cannot yet be said relative to the new place, save to surmise that it will not be a great time before it is as well stocked as the old home at the foot of Highgate Hill. There may be seen thousands of flowering plants, equally large numbers of those grown for their foliage, while it is needless to add that Orchids are seen on every side. Vast quantities of choice flowers, Ferns, Palms, and others, are required for one purpose alone—namely, the maintenance of a constant supply to the floral store in Piccadilly, where may always be seen something of more than ordinary beauty, and displayed in a most artistic fashion. Quality of flower or leafage is of paramount importance here, and it will be for its service that the Finchley nursery will be of the utmost value. The firm's skill in the making of floral devices is widely known, while the excellence of the flowers and foliage is of the highest.

Though there are not a great many houses at Holloway it is needless to say that the most has been made of the ground at disposal, while the structures themselves are full to repletion. The stock is of all kinds and varieties, and the major portion of the plants are in excellent health. The number of Palms in variety is enormous, and the diversity of size is most marked, some being scarcely more than seedlings, whereas others tower high above the head in the great conservatory at the main entrance. Enumeration of varieties is not desirable, as all are grown that are suitable for any phase of decoration. Crotons, too, are a great feature, and it is little short of surprising to see the richness and intensity of the colour development when we think of the smoky glass that surmounts them. Other coloured foliage plants are of the same high order, proving that the defects in the climatal conditions are made up for by general excellence of cultivation in every stage of the plant's growth.

Very noticeable as the several houses were traversed were the finer foliaged Aralias, and it was evident that the beauty and elegance of these plants were appreciated. Ferns occupied a considerable amount of space, as did Caladiums in various stages of growth. One might further enlarge upon the foliage plants, but mention must be made of the forms of Pitcher Plants that prove of so much interest to visitors. The most largely grown are the Nepenthes, with their pitchers at the extremities of the leaves. The varieties were numerous, and the plants were in capital condition. Then the North American Pitchers, commonly called Side Saddle Flowers, from the more or less fanciful resemblance of the flower to a lady's saddle, and botanically known as *Sarracenias*. These having been duly admired, the almost recumbent pitchers of *Cephalotus follicularis* were compared with those of the large *Nepenthes*, and the difference of habit noted by our guide, Mr. Glendenning. Just another carnivorous plant was observed—namely, *Dionæa muscipula*, whose peculiar leaves proved almost fascinating to some ladies who were visiting the nursery.

Turning now to the flowering plants we find ourselves confronted with a very long list, including Indian and mollis Azaleas, excellent Cannas, Carnations, Lilacs, Lily of the Valley, splendid Clivias with their handsome leaves and great globular heads of flowers, and which are here grown to such perfection; Amaryllises, past their best, but still bearing traces of a former greatness, and Anthuriums with hundreds of their brilliant scarlet and other coloured spathes, with a profusion of Orchids. In order to reserve space for a few of the most noteworthy of the latter no more plants will be named, for readers will know their names when it is said that all seasonable ones were there in abundance. The collection of Orchids at these nurseries is probably larger than many people suppose, and it embraces all the popular kinds in bulk, with others in lesser numbers according to their importance. House after house contained nothing but Orchids, some in flower, others just showing, with still more past their zenith; but each and every one in good health and condition.

Odontoglossums were making a rich display, and several forms of crispum were observed that were distinctly above average merit. *O. Ruckerianum*, *O. Harryanum*, *O. polyanthum*, and *O. excellens* were represented, as well as *O. cirrhosum*, *O. luteo-purpureum*, and *O. triumphans*. Cattleyas were not quite at their best, but forms of *Mendeli* and *Lawrenceana* were observed, with abundant promise on the other plants. Forms of *Lælia purpurata* were fairly numerous, some being of great merit, while *Cymbidiums*, *Vandas*, *Ada aurantiaca*, *Oncidiums*, *Phalænopsis*, *Dendrobiums*, and *Lycastes* were numerous and good. But of all the Orchids the *Cypripediums* were making the best display, and what with species, hybrids, and varieties, were well nigh endless. Almost all of those that flower at this period of the year, such as *Leeanum*, *Gertrude Hollington*, *grande*, *Charlesworthi*, and *Sedeni* were seen and admired for their handsome flowers and their rude health. These there were and others, but those readers who would know more of the occupants of the Victoria and Paradise Nurseries should wend their way to Holloway as early as they can, and will, like us, be more than satisfied with what they see.—P. J. R.

THE YOUNG GARDENERS' DOMAIN.

FAILURE, EXPERIMENT, SUCCESS.

THE defective, irregular break of the young rods in our early and midseason vineries this year proved to be a source of great anxiety and disappointment. At the time of starting they were tied in the orthodox style generally advocated and adopted—viz., by depressing the ends to form a slight curve. This method, it is affirmed, retards the rush of sap to the upper part of the rods, and assists in distributing it evenly from base to apex. But does it produce the desired effect? After studiously observing the results of this method (and it was my privilege to receive my elementary gardening education at a place where two score pot Vines were annually grown, besides four established vineries), I reply in the negative.

The young rods in question made a most satisfactory break on the outside of the curve, but the inside, or under eyes, scarcely made a start, and are at the present moment a great eyesore. The old rods in the same houses were suspended longitudinally, and made a most desirable break.

This observation, after some thought, led to an experiment. When starting the late vinery, instead of tying the young rods down in the orthodox style, they were suspended the same as the old rods. They produced a result exceeding all anticipation, breaking evenly the full length of the rods, thus practically proving the fallacy of the tying down practice.

I have frequently heard complaints about the irregular break of young Vine rods, so perhaps these few notes may prove of assistance. May I be allowed to ask those who still consider it necessary to adhere to the old practice of tying down—Would it not somewhat obviate the irregularity of the break by bringing the ends over *vice versa* after a few days' start, thus giving the same treatment to both sides of the rods? Perhaps some experienced cultivators will enlighten our minds on the subject.—VINIFERA.

WALLFLOWERS.

WALLFLOWERS are largely grown for spring bedding, and when bushy plants are to be had in the autumn a grand display of bloom may be expected. Many failures can be attributed to late sowing, leaving the seedlings to become drawn and weakly in the seed beds, or indifferent cultivation afterwards. When sown late they do not make such free growth or mature it, and consequently do not flower so freely.

Seeds should be sown about the middle of May, on a border which has an open sunny aspect; they are partial at this stage to a rather poor soil, well worked and gritty. When 2 inches high transplant them into rows 6 inches asunder, and 3 inches apart in the rows. In three weeks or a month the plants should be again transplanted, lifting every other row, and each alternate plant from the rows that remain, care being taken to keep as much soil adhering to the roots as possible.

The plants which are removed should be placed a foot apart each way, which gives them ample room to develop. If the weather is dry a thorough watering is necessary, and weekly waterings afterwards should hot weather prevail. Occasionally stirring the soil with a hoe between the plants is beneficial to them. Under the foregoing treatment they will make "stocky" plants of good size for planting in autumn, where they are to flower. Wallflowers are quite hardy, but are liable to be injured if frosts follow after heavy rains. The soil I have found to suit them best is a well-drained and deeply worked sandy loam.—NIL DESPERANDUM.

FORCING ROSES.

So universally appreciated is this queen of flowers that it would be difficult to prolong its season of flowering to excess. Roses may be had in abundance by the middle of March, or earlier if desired, by the aid of artificial heat, and thus a supply may be kept up until outdoor flowers are plentiful. The house having been thrown wide open during the autumn, and the trees exposed to the elements, a start may be made to prune the Roses preparatory for forcing. In pruning, the operator must be guided by common sense combined with a knowledge of the several varieties. In the case of climbing Roses remove old and exhausted wood, and retain a fair number of firm young growths, these being laid in at full length. Dwarfs are pruned according to their strength, the weaker ones being pruned the harder to insure a strong break, and *vice versa*, the object being to secure healthy young wood in abundance; it is recommended, however, never to prune Roses too hard that are to be forced early. Should the borders require renovating, remove a portion of the surface soil and give a liberal dressing of cow manure and heavy loam, the whole to be thoroughly settled by a soaking of water.

Roses in pots require a thorough overhauling, and in most cases repotting and relabelling. The balls of soil being fairly moist, turn the plant out of the pot, and with a pointed stick remove the crocks and part of the old soil, taking care not to injure the roots. If it is desired to replace them into the same size pot, a number of the older, and all injured roots may be removed, always making a clean cut. When this is accomplished, proceed to repot in clean, properly crocked pots, using a compost of heavy loam, with a fair proportion of cow manure and $\frac{1}{2}$ -inch bones. Place the compost into the pot in small quantities, making all thoroughly firm as the work proceeds. Water sparingly at first, until the roots take hold of the new compost, after which time abundance will be required.

Provided the work of pruning, top-dressing, and tying is finished by the end of the old year (which in all cases it should be for early forcing purposes), the house may be closed at once, maintaining a night temperature of 45° for the first few weeks, with a corresponding rise as the year advances and the sun gains power. After the first fortnight admit a little

air constantly if the weather permits, but avoid cold draughts, which are almost fatal to success. They bring in their wake aphides and the much-dreaded mildew, which, if once allowed to get a footing, is very difficult to eradicate. Always take the precaution, therefore, to allow no water to remain on the foliage after nightfall. As a remedy against mildew sulphur may be dusted on the affected parts as soon as detected; for aphides, an occasional use of XL All vaporiser will suffice to keep them in check. One more enemy of the Rose which I must not omit to mention is the Rose maggot, which makes its appearance simultaneously with the flower buds, and if not checked, will soon make short work of a whole crop of flowers. The best remedy is hand-picking, and a diligent search twice a week during the early part of the season will keep the pest at bay.

The syringe can be used lightly on bright mornings until the flowers open, damping the available surfaces being sufficient on dull sunless days. As growth advances, thorough soakings with tepid water will be required, and assistance in the form of liquid manure will greatly enhance both the size and colour of flowers and foliage. If large blooms be required, remove all buds except the centre one at an early stage, this being done early in the day when the growths are brittle in precisely the same manner in which Chrysanthemum buds are taken. As soon as a flower has passed its best it must be removed, as nothing tends more to shorten the season of flowering than leaving old flower stems on the plants. This rule may be applied to all flowers with equal force.

So many varieties of diversified colour and good habit are now offered for sale by our leading Rose growers that it would be unwise for me to enumerate any varieties here. Suffice it to say that if the selection is left to the nurserymen they can in most cases be relied upon to supply a succession of useful varieties at a reasonable price. From the fact that we have during the last few weeks cut many hundreds of useful Roses for house and personal decoration it may be inferred that their culture is understood, and the details given are quite trustworthy.—T. P.



HARDY FRUIT GARDEN.

Apricots, Peaches, and Nectarines.—*Thinning Fruit.*—A good set of fruit necessitates a considerable amount of thinning, which should be commenced early. The fruits of Apricots will be the first to require attention. Commence with the removal of ill-placed fruit. Thin-out the smallest of the remaining fruits at intervals, finally leaving the best and most prominent at a distance of 4 inches apart. Moorpark Apricots and similarly fine varieties may be left 6 inches asunder. Peaches may be left 10 and Nectarines about 8 inches apart. Vigorous trees, however, will carry a larger crop than weak trees. This must be borne in mind when finally apportioning the fruit. Any fruits which turn yellow or fail to swell freely are useless, and there are numbers which it is not desirable should be retained, owing to their unsuitable position behind branches or close to wires. These can be clipped off as soon as possible.

Watering.—Should there be any probability of the soil about the roots being dry, it will be desirable to apply a copious soaking of water. Trees in foliage and swelling fruit demand constant and regular supplies of moisture for the roots, and as the crop advances additional nourishment, which may be afforded by liquid manure.

Syringing.—A good syringing of the foliage towards the close of warm days is of material assistance in maintaining the trees clean, disturbing insects, and preventing their multiplication. If green and black aphides make their appearance, in spite of daily vigorous syringing with clear water or through neglecting to syringe at all, applications of soapy water, 2 ozs. to the gallon, must be given. Strong insecticides are effective destroyers of insects, but they are also liable to damage the young fruits, hence their employment is not so desirable early in the season. The advertised mixtures upon the whole are good, and save time in preparation, but they ought not to be used stronger than advised by the vendors.

Thinning and Regulating Shoots.—There will probably be some surplus shoots requiring removal or thinning out to properly furnish the trees and prevent overcrowding. It is, therefore, essential to make examination at intervals, cutting out any crowded growths or shoots unsuitably placed for laying in, as such may be overlooked in the course of disbudding. This should be considered supplementary to disbudding, and is better carried out now, than allowing known useless shoots to occupy space and crowd the trees for a whole season to be eventually removed.

As a rule each bearing shoot of Peaches and Nectarines, also many of those of Apricots, require a young vigorous growth at the base to be trained in as a successional shoot for the following year. These must be reserved now, if not fixed upon at the earlier disbudding. One growth above the fruit must also be encouraged. The basal shoot is best if left on the upper side, carrying this out systematically if possible. Its adoption will certainly prevent crowding, and render the training easier.

Pears.—The fruit on cordons, pyramids, and small bush trees may be obtained finer if thinning is practised. Gradually reduce the fruit to two

upon each spur. A vigorous syringing is a good method of clearing away dead petals and imperfectly fertilised fruits failing to swell.

Plums.—A preliminary thinning of the bunches of fruit may be carried out with Plums on walls, the trees having set a fair quantity of fruit. The final thinning should be deferred until the fruits have stoned. Syringe the trees in warm weather as an aid to cleanliness, but the points of shoots attacked with aphids ought to be dipped in an insecticide or dusted with tobacco powder. The removal of superfluous shoots should still be carried on. Some may be required to lay-in for extension or furnishing, but the lateral or foreright shoots need shortening to three full-sized leaves.

Raspberries.—Hoe down small weeds between the rows, and fork or pull up strong rooted weeds. Superfluous suckers, while yet comparatively small, should be thinned out, so as to leave plenty of space for those which are to be permanently retained. Suckers frequently spring up freely at a distance from the stools. The strongest, if carefully lifted and replanted on good ground, will soon be established. Whether required for planting or not, all such suckers ought to be forked up, not hoed off close to the surface, as they will grow again. On light soils, after hoeing, a mulching of manure may be given.

General Hoeing Fruit Quarters.—Weeds are sure to grow among fruit trees and bushes at this season; therefore, to keep them down and maintain the soil clean, the Dutch hoe should be run over the ground on dry sunny days.

Mulching Gooseberries and Currants.—As Gooseberries and Currants are now swelling their crops of fruit, an application of decomposed manure placed over the roots, and water or liquid manure given, will assist largely in affording the extra nourishment required for perfecting a crop.

FRUIT FORCING.

Figs.—*Early Forced Trees in Pots.*—When the first crop on the very early varieties is gathered return to the treatment applicable to trees swelling their crops. If red spider has gained a footing thoroughly cleanse the trees with some approved mixture. Syringe the trees forcibly on fine evenings until new growth is being made freely, and in ordinary routine twice a day—in the morning and early afternoon. Where the second crop is thickly set thin liberally, leaving the fruits nearest the base of the shoots, and do not overtax the trees. Expose the ripening fruits as much as possible, and increase the ventilation. Stop the shoots and thin where crowded, for vigorous sturdy shoots produce the finest Figs.

Planted-out Trees.—The earliest started trees have the fruit approaching ripeness, and must not be wetted, maintaining atmospheric moisture by keeping the mulching, walls, and paths properly moistened. Moisture can be prevented from condensing on the fruit by keeping a steady circulation of air with gentle fire heat. Care must be taken to afford plentiful supplies of tepid liquid manure to the roots. Allow the leading shoots now to extend, unless unduly vigorous, until they reach the extremity of the trellis, then stop them.

Late Houses.—Though Figs are grown very successfully in unheated houses, producing one crop, which affords an acceptable supply of fruit in August and September, they require in some localities a genial warmth, especially the late varieties, such as Negro Largo, to ripen properly. The trees must have copious supplies of water, and be syringed twice a day. In cloudy weather, however, the afternoon syringing should be dispensed with. The young growths in these structures must be trained a good distance apart, every shoot having full exposure to light and air, so as to insure sturdy fruitful wood.

Vines.—*Early Forced.*—Where the Grapes are ripe, fire heat will only be necessary to keep the temperature at about 60° at night, ventilating freely by day. Black Hamburgs will need slight shade, and it will also prevent amber-coloured Grapes, such as Buckland Sweetwater, assuming a brownish hue. Damp the house occasionally, not allowing moisture to be condensed on the berries, but dissipate it by early ventilation. A certain amount of air moisture is necessary for the foliage, and it will not injure the Grapes, provided the atmosphere is not stagnant. A moderate extent of lateral growth should be encouraged, as it tends to keep the roots active, and to prevent the premature ripening of the foliage, which must be kept clean and healthy as long as possible.

Vines Started at the New Year.—The Grapes are colouring, and need a moderate amount of air moisture, damping the house two or three times a day until the colouring approaches completion, when a drier atmosphere will be advisable. Free ventilation should be afforded, having a little at the top of the house constantly; a circulation of warm air contributes to good finish and quality. Moisture at the roots must be furnished thoroughly; one good soaking of tepid liquid manure when the Grapes change colour, and a mulch of partially decayed manure, will generally suffice until the crops are ripe. Keep the night temperature at 65°, a little more on warm and a few degrees less on cold nights, 70° to 75° by day, 80° to 90° with sun heat, and full ventilation, closing between these numbers all but a small space at the top of the house.

Succession Houses.—The sun is an important factor in keeping down the coal bill. There is nothing like opening the ventilators early in the morning, admitting air in a safe quantity to pass through the house. It causes moisture to disappear, allows the foliage and fruit to warm equally with the atmosphere, preventing scorching, while elaboration begins early, and is continued through the day. By closing early the crops are accelerated in swelling, provided there is a due supply of atmospheric moisture, which can be secured by damping the paths and borders at closing time. Before nightfall admit a little air at the top of the house, damping with liquid manure. Thinning the berries must be attended to and followed up persistently. Remove all surplus bunches in good time. Stop or remove all laterals not required, letting those retained extend

where space permits. Do not crowd the foliage, and never allow the laterals to interfere with the principal leaves. Supply water or liquid manure to the borders liberally when needed, and encourage surface roots with suitable top-dressings. The night temperature should be kept at 60° to 65°, 70° to 75° by day, and 80° to 90° from sun heat.

Late Vines.—These are advanced for flowering, and many are in bloom. When out allow a night temperature of 70°, and 80° by day, advancing to 85° or 90° from sun heat, with a free circulation of air, a genial atmosphere being maintained by damping the paths and borders. Brush the shy-setting varieties over with a camel's hair brush, and fertilise the bunches carefully where there is a deficiency of pollen. Up to and after flowering the night temperature should be kept at 65°, 70° to 75° by day artificially, keeping at 80° to 85°, or 90° through the day with moderate ventilation in bright weather, and abundant air when mild.

THE BEE-KEEPER.

FOUL BROOD.

It is a serious matter to a bee-keeper when, through no fault of his own, he suddenly finds a strong colony of bees in his apiary attacked with this dread disease. A case to point has come under our notice during the past few days. Owing to causes which need not be here explained, a bee-keeper last autumn found two of his stocks queenless. Seeing an advertisement from an apiarian in a neighbouring county offering queens, guaranteed healthy and free from disease, he obtained two, the seller assuring him foul brood was unknown in that district. They were safely introduced, and all was supposed to be going on well, until, on examining them for the first time this spring, the purchaser found one of them a mass of foul brood.

We advised summary measures. The bees were suffocated the same night, and with the stores and frames were committed to the flames the following morning. The hive and floor board were placed in a large copper and boiled, and, after being painted, will be used again. Numerous other stocks were within a few yards of the affected hive, and the chances are that other colonies will become affected. What can be said of the bee-keeper who will thus send diseased bees throughout the length and breadth of the land? As the law now stands we think the purchaser would have a difficulty in obtaining compensation. There is no doubt about the disease coming in this manner, as there had never been known a case of foul brood within many miles of the apiary in which the queens were introduced.

HIVES FOR GENERAL USE.

It is a debateable question as to which is the best hive for general purposes, and also whether the frames should be long or short, deep or shallow. Bee-keepers, as a rule, favour these, and we think rightly so, with which they have had experience and obtained the greatest amount of success. But as so much depends on the management of the bees kept under various conditions, combined with the capabilities of persons in charge, that it is not safe to aver that a hive of certain dimensions is the only one to insure success. The fallacy of doing so is apparent to all who study the subject from a practical point of view. But if we can have a recognised size, both for the hive and the frame, such as may be useful in various parts of the country, and from which a good surplus may be obtained in ordinary seasons, it will in the end be of great assistance to bee-keepers. By having all frames in the apiary (whether large or small) made of the same dimensions, they are interchangeable one with the other. The convenience of this is well known to those having several stocks under their charge. One is then able to assist weak colonies with a frame of brood if required, and it is also desirable in the matter of stores. However carefully the bees may be fed in the autumn, there is always a great difference in the spring, when some stocks will be found on the verge of starvation, whereas others will have enough and to spare, and a frame of stores removed in this way from the latter and given to the former will be found to answer much better in practice than giving artificial food.

As regards the size of the hives, it is immaterial so long as there is sufficient space at disposal to expand the brood nest as required. This should not be too large, or if large may be reduced by removing several frames, when a surplus is coming in freely, so that it may be stored in supers. But as the size of hives has been discussed in recent notes it is not necessary to again give the dimensions of those most favoured by us.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

W. J. Godfrey, Exmouth.—*Carnations*.
R. C. Notcutt, Ipswich and Woodbridge.—*Dahlias, Begonias, and other Plants*.



TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Warts on Vine Leaves (M. B. R.).—The excrescences are as likely to occur on the Gros Colman leaves with the atmosphere too dry, as when kept in a genial state. As you see on page 386 Mr. Buchanan found that by preventing currents of air through the front sashes he preserved the foliage of Gros Colman in a healthy condition. We have observed similar results coupled with shading a Vine when the leaves were prone to depart from a normal state. The cultivator mentioned did not find shading of service in the north. The early ripening is the result of the prematurely hardened condition of the leaves.

Chamaepeuce diacantha (J. F.).—The position is not at all suitable for the seed pan; had you placed the pot in gentle heat, a frame on a mild hotbed answering well, the seed would most probably have germinated in about three weeks. If you are in a position to do so shift the pot at once to heat, continue to shade, and keep the soil uniformly moist as before, and according as the seedlings (they sometimes come up very irregularly) are large enough transplant singly to small pots, moving them with a label, so as not to greatly disturb the rest of the soil. If kept growing in gentle heat a few plants may possibly be sufficiently well rooted to plant out early in June. Once they commence growing progress is rapid. These Fish-bone Thistles can be raised from seed in the autumn, but the plants are difficult to keep during the winter.

Liquid Manure for Strawberries (New Reader).—There is no better liquid manure for Strawberries than the drainage from manure heaps or sewage, but when these are not obtainable guano water may be used, and has often been applied with great benefit. Half an ounce dissolved in a gallon of water is sufficient for plants in pots, but twice that quantity may be applied safely to established plants that need extra support in the open air. It should not be poured on the fruit or leaves, only on the soil, copiously, and if this can be mulched afterwards for the retention of the moisture it will be an advantage. It is an excellent plan to give liquid manure as soon as the fruit is set, then cover the ground with straw or other suitable material for keeping the fruit clean and preventing the evaporation of moisture from the earth. The use of liquid manure should be discontinued when the fruits commence colouring.

Silver Leaf in Peach Tree (Gardener).—The affection is common with Plums, the upper cuticle usually separating from the substance beneath, and hence giving an appearance of transparency. In some that we had microscopically examined no fungus was discovered, and no cause for the state of the leaves could be ascribed or remedy suggested. In the Peach leaves sent a fungus has been found by Mr. Abbey, of which an illustration will be given in a future issue. There is not time for its preparation this week. We do not think the affection would arise from the trees having a large quantity of wood cut out of them, but the fungus would be favoured by faulty ventilation. The casting of the fruit indicates imperfect maturity of the wood, and we should endeavour to have it well ripened this season, so as to secure a better result another year. The trees would be improved by a top-dressing of the following mixture:—Dissolved bones, dry and crumbling, five parts; double sulphate of potash and magnesia, three parts; and one part sulphate of iron, mixed, using 4 ozs. per square yard, and pointing-in very lightly. If the trees produce long-jointed sappy wood it would be advisable to lift them, partially or entirely, in the autumn, or at least root-prune, to secure a mass of fibrous roots in the surface layer of a firm yet porous border.

Sulphate of Ammonia and Sulphate of Iron as Manure for Plants (Amateur).—If you propose to use the substances in mixture the proportions should not be more than $\frac{1}{2}$ oz. sulphate of ammonia and $\frac{1}{4}$ oz. sulphate of iron per gallon of water for plants generally; for such delicately rooted plants as Rhododendrons use double the quantity of water to the $\frac{3}{4}$ oz. of mixture. The articles are useful, but only supply nitrogen, iron, and sulphur, the two former accelerating growth and deepening the colour of foliage. They must not be used too often, about once a week usually sufficing. Neither is desirable for mixing with soil, but some use about a teaspoonful to a peck, mixing well before potting. The use of the ingredients on the soil in pots should not be more in mixture than a pinch, as of snuff, between the finger and thumb for a 6-inch pot, sprinkling evenly and at once washing in.

Rootless Hippeastrums (Amateur).—The plants are probably suffering from overwatering, which has caused them to decay through sourness of soil. The bulbs should be quite dry in winter, and kept so till growth starts, then plunged and syringed, watering carefully till leaves show. If in bottom heat all the better. As the plants are only pushing flower buds now it is questionable if they can be made into healthy plants, but we should try the effect of bottom heat if any be at command, keeping the soil only moderately moist. Perhaps, however, they have the roots destroyed by mites or other pests, many bulbs having the life taken out of them by the insidious foes living between the outer scales and at the base, whence should spring the roots, but cannot through the nuclei having been destroyed. In that case nothing will be of any use until the pests are destroyed. Where they exist the simplest is to subject them to water at a temperature of 130° to 135° for about five minutes, and afterwards repot, giving bottom heat, sprinkling occasionally, but affording little water at the roots until these have well hold of the soil. A bottom heat of 80° to 85° usually causes free rooting, and helps the plants forward famously.

Paris Green (M. O.).—This compound, though poisonous and requiring great care in using, is nevertheless one of the finest remedies known for destroying the small but destructive larvæ of the winter codlin, lackey, magpie, and umber moths, which annually work havoc with the young foliage, the flowers, and often the fruit of Apples, Pears, and Plums. During the blossoming period it is unsafe to apply Paris green on account of the bees which, visiting the flowers, perform substantial service in aiding fertilisation. When, however, the flowers have decayed, and attacks of the larvæ are imminent, spraying once a fortnight for some weeks with Paris green will prove a most effectual remedy. To apply it so that it acts destructively to caterpillars or other pests it must be distributed in a fine mist-like spray, both on the under and upper surfaces of the leaves where it is deposited as a thin film or sediment. Through this the young caterpillars have to pierce to find the juicy food they seek, but in doing so they imbibe the poison which quickly kills them. The proportions of Paris green and water are 1 oz. to 20 gallons of water. This is safe for tender foliage. Paris green is obtainable both as powder and paste; the latter is the safer and better because it is more easily mixed with water. The best instruments for delivering the mixtures are either a knapsack pump, or some other spray distributor.

Young Cucumbers Turning Yellow and Decaying (G. R.).—The young Cucumbers are attacked by a spot fungus (Colletotrichum lagenarium, syn. Glæosporium Lindemuthianum), which occurs in several Continental countries and over a large portion of the United States. It has also been found in this country during recent years, both outdoors on Scarlet Runners, Ridge Cucumbers, Gourds, and Vegetable Marrows, and indoors on French Beans, Cucumbers, and Melons. It seldom does any great mischief, except during rainy or a long spell of warm, moist weather, and in structures kept too close and moist. The only preventive we have found has been the use of a little sulphur on the hot-water pipes, and maintaining a temperature of 65° to 70° at night, 70° to 75° by day up to 85° , 90° , or 100° from sun heat, not giving more moisture than is absolutely necessary for the health of the foliage. Spraying with quarter strength Bordeaux mixture has been advised, but unless begun early, say when the plants are about three weeks old, it has little effect. Cut away all the affected fruits and burn them. The fungus goes over partly on diseased seeds, and then appears in the young plants, commonly killing them, and the spores thus produced attack large plants, producing "spot" or canker on the pods of Beans or fruits of Cucumbers or Melons. Affected seeds are easily recognised by their dark shrunken spots. We have tried pickling the seed similar to Wheat with sulphate of copper, but find the Jensen process of steeping in water at 135° for about five minutes before sowing the safer practice.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (H. S.).—1 and 2, forms of *Cattleya Mendeli*; 3 and 4, poor varieties of *C. Mossiæ*; 5, *Bifrenaria Harrisonæ*. (D. W. B.).—1, *Pyrus spectabilis*; 2, *Lonicera tartarica*; 3, *Prunus*

(*Cerasus*) *padus*. (W. G.).—1, *Fuchsia procumbens*; 2, *Anthericum variegatum*; 3, *Sparmannia africana*; 4, *Hibiscus sinensis*. (T. B.).—1, a good dark variety of *Lælia purpurata*; 2, *L. elegans*. (S.).—A form of *Odontoglossum Andersonianum*.

COVENT GARDEN MARKET.—MAY 18TH.

FRUIT.			
	s. d.	s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	1 6	to 4 0	
Cobs ...	0 0	0 0	
Filberts, 100 lbs. ...	0 0	0 0	
Grapes, lb. ...	1 9	3 6	
Lemons, case ...	11 0	to 14 0	
St. Michael's Pines, each ...	2 6	5 0	
Strawberries ...	2 0	5 0	

VEGETABLES.			
	s. d.	s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	
Beet, Red, doz. ...	1 0	0 0	
Carrots, bunch ...	0 3	0 4	
Cauliflowers, doz. ...	2 0	3 0	
Celery, bundle ...	1 0	0 0	
Coleworts, doz. bnchs. ...	2 0	4 0	
Cucumbers ...	0 4	0 8	
Endive, doz. ...	1 3	1 6	
Herbs, bunch ...	0 3	0 0	
Leeks, bunch ...	0 2	0 0	
Lettuce, doz. ...	1 3	0 0	
Mushrooms, lb. ...	0 6	0 8	
Mustard and Cress, punnet ...	0 2	to 0 4	
Onions, bushel ...	3 6	4 0	
Parsley, doz. bnchs. ...	2 0	3 0	
Parsnips, doz. ...	1 0	0 0	
Potatoes, cwt. ...	2 0	4 0	
Salsafy, bundle ...	1 0	0 0	
Scorzonera, bundle ...	1 6	0 0	
Seakale, basket ...	1 6	1 0	
Shallots, lb. ...	0 3	0 0	
Spinach, pad ...	0 0	0 0	
Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9	
Tomatoes, lb. ...	0 4	0 9	
Turnips, bunch ...	0 3	0 4	

PLANTS IN POTS.			
	s. d.	s. d.	s. d.
Arbor Vita, var., doz. ...	6 0	to 36 0	
Aspidistra, doz. ...	18 0	36 0	
Aspidistra, specimen ...	5 0	10 6	
Calceolaria, per doz. ...	6 0	9 0	
Cineraria, per doz. ...	6 0	9 0	
Dracæna, var., doz. ...	12 0	30 0	
Dracæna viridis, doz. ...	9 0	18 0	
Erica Cavendishi ...	18 0	30 0	
„ various, per doz. ...	12 0	24 0	
Euonymus, var., doz. ...	6 0	18 0	
Evergreens, var., doz. ...	4 0	18 0	
Ferns, var., doz. ...	4 0	18 0	
„ small, 100 ...	4 0	8 0	
Ficus elastica, each ...	1 0	7 0	
Foliage plants, var., each ...	1 0	5 0	
Fuchsia ...	6 0	to 9 0	
Heliotrope, per doz. ...	6 0	9 0	
Hydrangea, per doz. ...	6 0	9 0	
Lilium Harrisii, doz. ...	12 0	18 0	
Lobelia, per doz. ...	4 0	6 0	
Lycopodiums, doz. ...	3 0	4 0	
Marguerite Daisy, doz. ...	6 0	9 0	
Mignonette, doz. ...	4 0	6 0	
Musk, per doz. ...	2 0	6 0	
Myrtles, doz. ...	6 0	9 0	
Palms, in var., each ...	1 0	15 0	
„ specimens ...	21 0	63 0	
Pelargoniums, scarlet, doz. ...	4 0	6 0	
„ ...	9 0	15 0	

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.	s. d.	s. d.
Anemone, dozen bunches ...	2 0	to 4 0		
Arum Lilies, 12 blooms ...	3 0	4 0		
Asparagus, Fern, bunch ...	2 0	4 0		
Azalea, dozen sprays ...	0 6	0 9		
Bluebells, dozen bunches ...	1 0	2 0		
Bouvardias, bunch ...	0 6	0 9		
Carnations, 12 blooms ...	1 0	3 0		
Eucharis, doz. ...	3 0	4 0		
Gardenias, doz. ...	1 0	3 0		
Geranium, scarlet, dozen bunches ...	3 0	6 0		
Iris, dozen bunches ...	4 0	6 0		
Lilac (French), bunch ...	3 6	4 0		
Lilium longiflorum, 12 blms ...	2 0	3 0		
Lily of the Valley, 12 sprays ...	0 6	1 0		
Maidenhair Fern, dozen bunches ...	4 0	8 0		
Marguerites, doz. bunches ...	1 6	2 6		
Mignonette, doz. bnchs. ...	2 0	to 4 0		
Myosotis, dozen bunches ...	1 0	2 0		
Narciss, dozen bunches ...	1 0	3 0		
Orchids, var., doz. blooms ...	1 6	9 0		
Pelargoniums, doz. bnchs. ...	4 0	6 0		
Polyanthus, doz. bunches ...	1 0	1 6		
Roses (indoor), doz. ...	0 6	1 6		
„ Red, per doz. ...	1 0	3 0		
„ Tea, white, dozen ...	1 0	2 0		
„ Yellow, doz. (Perles) ...	1 0	2 0		
„ Safrano (English) doz. ...	1 0	2 0		
„ Pink, dozen ...	3 0	5 0		
Smilax, bunch ...	2 0	3 0		
Tulips, dozen bunches ...	2 0	4 0		
„ Parme (French), bunch ...	2 6	3 6		
Wallflowers, doz. bnchs. ...	1 0	3 0		



THE OLD STORY.

WE live in an age of science, we are full of excellent modern inventions, improvements greet us on every side, and yet how helpless we are in many ways and many things. It is perhaps just as well that it is so. If everything came easily to our hand, where would be our energy and industry? Sometimes, however, we feel ready to sit down and give up. We have exercised our greatest skill, we have spared neither pains nor expense, and then, possibly when we hoped to see our labours rewarded by a grand crop, the seasons have proved disastrous, and our bright prospects have been dispersed like dew before the rising sun.

In visitations of this nature we trace the hand of Providence, and

we, like the patriarch of old, say, "Shall we not receive good at the hand of God, and shall we not receive evil?"

But there are other difficulties with which we have to contend, neither unexpected nor unusual; and though they are of yearly occurrence, from the letters we read in the papers, and from the excellent advice given, we might imagine they were quite new obstacles, of the treatment of which the writers knew nothing whatever. We refer to the earth's most fruitful crop—weeds, in their multifarious forms. "Thorns also and thistles shall it bring forth," was the verdict in the world's early days, and that sentence has never been revoked. Whatever other seeds fail to germinate, there is no fear of the failure of the weed crop.

We should like to know a few particulars of a good farmer's labour bill for weeding alone; it would startle some of us considerably. We fancy the last few years have seen much less done in the way of hoeing Wheat; of course the crop has been by no means a paying one, and the farmer has been of necessity obliged to curtail his labour as much as possible. We own to liking to see clean Wheat stubble after harvest—it looks more workmanlike.

If Wheat has been neglected, the root crops will not allow themselves to be put on one side. The tender little plants, often struggling against adverse climatic influences, must at all cost be saved from death by smothering; and in the freshly tilled ground, rich with manure, the weeds grow faster than the legitimate plants. There is one crop that acts as a grand weed-killer. Nothing can flourish where strong Potato tops abound, and the process of lifting makes the work complete.

We have always held an idea that constant and incessant cultivation were the only methods of keeping weeds at bay. The seeds come from no one knows where, and some have a marvellous power of lying dormant for years, and germinating when brought to the surface by extra deep cultivation. There is one weed in particular which is much in evidence just at this season of the year—we refer to "charlock," "ketlock," or "brassacs," these different names being local. The seed is oily in its nature, and therefore, as we said before, will exist unsuspected for years. One thing alone is fatal to the young plant, and that is frost. In Barley fields we may see it by millions, and the spring frosts are not sufficient to destroy it; the only course appears to be the harrow, but there again we are fast, for if the Clover seeds happen to have been sown—no harrow must go near. Of course there is the old process of hand-pulling—very laborious, very dear, but most effective; in fact, we feel that after all old-fashioned farmers knew a thing or two, and employed means that, though costly at the outset, proved the cheapest in the long run.

There is nothing but the hoe for Turnips and Swedes, for the rich superphosphates encourage and foster the ketlock as much as the little Turnip plant. Root growing has always been, and must ever continue, a costly process; but we can find no substitute for them.

We are always ready to greet with pleasure any labour-saving appliance; but we, being of a cautious temperament, prefer that our neighbour should take the risk of first experiment. We have read with interest an account of a new weed destroyer that will, if it comes up to the expectation of the discoverer, revolutionise the science of weed destroying. As is the case usually, the discovery was accidental. The owner of a French vineyard, in spraying his Vines, noticed that the mixture used completely destroyed plants of charlock.

Following up this success, an experiment was made on a field of charlock and Oats, with the result that the weed succumbed, while the Oat crop remained uninjured. Last June the experiment was again tried on a piece of Oats, a good crop so far as charlock and wild radish would allow. The spraying mixture used was a solution containing 5 per cent. of sulphate of copper. The weeds turned from yellow to black, and the Oats, which on first appearance looked sickly, quickly recovered tone. Among the Oats were plants of Red Clover, which assumed much finer proportions than that Clover which had been outside the treated portion of the field,

Had the sulphate of copper wrought the improvement, or was it simply because, the noxious weed being gone, the valuable plant had more room for food and development?

In another case a Barley crop was chosen for the experiment, and as sulphate of copper is a costly material, sulphate of iron was used instead, a solution containing 30 per cent. of iron. The mixture was sprayed in the evening of August 20th; a heavy rain fell some hours later, and in the morning the charlock plants were found to be dead or dying. The Barley received a check which arrested its growth for a few days.

In another set of experiments it was satisfactorily proved that 10 per cent. of sulphate was sufficiently strong to kill all weeds. If, as stated, the cost per acre is about 3s. 2d., this new discovery is a very valuable one. There would be, too, the initial cost of the spraying machine; but this, we should think, need not be a serious consideration. Such a machine could be hired out throughout the length and breadth of a parish.

It would be much more portable than a threshing machine, and it would pay for itself many times over.

WORK ON THE HOME FARM.

At last we have three fine days in succession and are able to set drags and harrows to work once more with a fair prospect of benefiting by the work done. We are dragging fallows through, and harrowing after a day's interval has allowed the surface to dry; another harrowing will follow, then the roll and harrow again, when the little bits of twitch still left should be on the surface clear of soil, and in a fair way to die if the weather will keep dry enough to allow them to do so.

Ridge harrows are kept constantly at work amongst the Potatoes, some of which will soon be putting in an appearance above ground. As there is still a little danger of frost we are ridging these up afresh to keep them out of harm's way a little longer. Apart from that consideration the ridging and subsequent horse-hoeing down again must save manual labour.

We begin to see many thistles amongst the corn, and "All hands to the hoe" will be the cry. Wheat at present, or rather at prospective autumn prices, should be worth a little more labour than it has been given of late years, and as far as possible we shall give ours a thorough hoeing. This will occupy the men this month out. The spring corn must be weeded, and this work can be very well performed by women if they can be had and the weather be decently fine. Women are very quick at detecting weeds, but do not like working amongst wet corn, particularly amongst Wheat, which, being so much higher and stronger than Barley, often is hardly ever dry, even in fine weather, if the dews are heavy; so to make the best of female labour keep it amongst the Barley. We can get strong girls at 1s. 3d. per day, and two will do more than one man.

The hoe, like every other tool, should be kept in good order and fairly sharp at the edge; it should be capable of doing its work without rough usage, and should never be handled as if the workman were chopping wood. If the hoe be lifted high from the ground it often misses its intended mark and cuts up corn instead of weeds, whilst the latter requires another stroke, and time and strength are both wasted.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1898.	May.	Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun		On Grass
		inches	deg.	deg.		deg.	deg.	deg.	deg.	deg.	inches
Sunday	8	30.195	49.4	47.3	W.	51.4	56.9	48.7	86.3	46.9	0.016
Monday	9	30.071	56.4	50.7	N.W.	50.9	62.7	48.6	96.3	41.2	0.028
Tuesday	10	29.910	55.8	53.4	W.	51.6	61.2	49.7	80.3	46.1	0.169
Wednesday	11	29.272	51.9	45.8	W.	51.9	58.1	47.8	110.6	48.7	0.010
Thursday	12	29.252	48.2	45.3	N.	51.8	55.9	44.9	100.1	40.0	0.029
Friday	13	29.710	49.7	42.3	W.	49.9	57.7	34.6	109.1	30.8	0.113
Saturday	14	29.671	51.4	47.4	W.	50.3	61.7	45.2	110.6	42.4	0.069
		29.726	51.8	47.5		51.1	59.2	45.6	99.0	42.3	0.434

REMARKS.

8th.—Overcast, with drizzle and slight showers early, and in afternoon.
9th.—Overcast, with occasional gleams of sun in morning; bright sun from 3 P.M.
10th.—Rainy early and at night; overcast throughout, with spots of rain at times.
11th.—Gale and heavy rain in small hours; windy and brilliant day, but spots of rain at noon, and a shower at 7 P.M.
12th.—Generally overcast with spots of rain in morning, and a heavy shower at 5 P.M., but occasional sunshine.
13th.—Brilliant till 9 A.M., frequently cloudy after; spots of rain at 4.30 P.M.; heavy shower at 7 P.M.
14th.—Heavy showers early; alternate cloud and sunshine during day.
Rain every day, but the aggregate depth not half an inch.—G. J. SYMONS.

W. CLIBRAN & SON'S

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OF

Garden & Conservatory Plants.

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Of these alone the stock numbers several hundred thousand plants, all of the very best procurable types.

COLLECTIONS (our Selection only):—12 sorts for hot dry situations on Rockery, Walls, &c., 4/-; 12 for moist shady Rockeries, 4/-; 12 for sunny borders, 4/- and 6/-; 6 Aquatic plants for deep water, 6/-; 12 Aquatics for boggy places, 4/- and 6/-; Asters (Michaelmas Daisies), 6 sorts for 2/6, 12 for 4/-, 25 for 7/6; Sempervivums, 12 sorts from 3/6; 50 fine showy Border perennials in 50 varieties, 15/- and 21/-; 100 ditto, in 100 varieties, 35/- and 42/-. As all these plants are supplied in pots, they may be planted out practically at any time.

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12 varieties flowering Stove Plants from 10/-; 12 varieties foliage Stove Plants from 18/-; 12 varieties Greenhouse Plants from 12/6; 12 varieties Caladiums from 12/-; 12 varieties Crotons from 24/-; 6 Epiphyllums from 7/6; 12 distinct named Gloxinias from 18/-; 12 Streptocarpus seedlings, in 3 inch pots, from 6/-; 12 double seedling Begonias, finest selected, true to colour and shade, 12/- to 30/-; 12 distinct Ferns for stove from 9/-; 12 ditto for Greenhouse from 6/-; 12 different Adiantums from 6/-; seedling Ferns for Rockeries, Table Decoration, &c., from 3/- per dozen.

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SPECIAL OFFER.—12 splendid Cactus Dahlias, including the following superb Novelties of 1897:—Cycle, Ensign, Flossie, Harry Stredwick, and Mrs. Kingsley Foster, together with Beatrice, George Marlow, J. E. Frewer, Lady Penzance, Mrs. Wilson Noble, Mrs. Francis Fell, and Viscount Boyne. Post free, 12/6.

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CARTERS' TESTED SEEDS.—
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CALCEOLARIA, CARTERS' VICTORIA.—
The finest in the world. Real gems of splendid habit.

CINERARIA, BRILLIANT PRIZE.—
Brilliant colours, endless variety. The grandest strain ever seen.

PRIMULA, HOLBORN PRIZE.—
Grand blossoms of rich colours. Single varieties, choice mixed colours; double varieties, choice mixed colours. Single, in separate colours, viz., blue, scarlet, rose, or white. Double, in separate colours, viz., crimson, lilac, rose, or white.

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237, 238, and 97, HIGH HOLBORN, LONDON.

TREE TOMATO.—Grand New Hybrid, no stakes required. Dwarf and easy to grow, heavy cropper, fine fruit. Good for open-air culture. (See illustration, *Amateur Gardening*, April 16th.) Plants, 3 for 2/-, 6 for 3/-, or 5/- per dozen, free for cash.—R. HOLMES, Norwich.

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Messrs. RANSOMES, SIMS & JEFFRIES,
PRINCES STREET, IPSWICH.



Journal of Horticulture.

THURSDAY, MAY 26, 1898.

THE JOURNAL OF HORTICULTURE can be obtained from the Office, 12, Mitre Court Chambers, Fleet St. London, post free for a Quarter, 3/9. Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.

THE TEMPLE SHOW.

FOR the eleventh time the Summer Show of the Royal Horticultural Society will, on the day of publication of these lines, be displayed in the fine open space known as the Temple Gardens. It is an ideal place for a large show, kindly placed at the disposal of the Society by the Benchers of the Inner Temple, and the favour cannot be too highly appreciated.

Naturally the authorities cherish the fine open lawn, and it speaks well for the show managers that the sward is not injured, though an enormous extent of boarding is necessary for its preservation. The only effect of the covering is to turn the grass a paler green, but it assumes its ordinary hue in the course of a very few days after the flooring is removed.

Not the least advantage of the site is its accessibility. The northern entrance to the Gardens can be reached in two or three minutes by various outlets from Fleet Street; while on the much longer south side runs the splendid promenade, the Thames Embankment, from which the greater number of visitors enter the enclosure.

The shows have increased in magnitude till the full amount of disposable space is occupied. If convenience could be afforded for all the plants, flowers, and other produce that cultivators would like to arrange, the exhibitions would, large as they are, doubtless be as large again; but it does not follow that they would be as good again, as there would be much more duplicating, while, as a rule, the closer the selection the higher the quality and greater the merit of the respective groups.

Moreover, the display is large enough to satisfy all reasonable visitors, and if absence of complaints on the question of extent is a criterion, the show does satisfy them, for we have heard of no such complaints; while as to quality, diversity, beauty, and interest of the exhibits individually, they are, on the whole, and in their several and varied features, unsurpassable. Collectively the best is done that can be done to produce an imposing effect.

The Temple Shows differ from all others.

There is no schedule of specified classes, but varying amounts of space are allocated to applicants, and they occupy it with the best products at disposal. This permits, not only of large and splendidly grown plants being arranged, but also of smaller, which are rich and rare, or the latest and best introductions, or home-raised varieties, being placed before the public.

Then, in addition to the plants, and an important addition too—fruits and vegetables, both in the guise of bearing trees and plants, as well as in dishes of the best kinds and quality which the season affords, go to form in its entirety the best and most complete representation of British horticulture that can be seen at the end of the "merrie month of May."

From end to end of the show there can scarcely be less than half a mile in length of groups of plants, flowers, and other products of the nature indicated, arranged on the tables, in banks, or other forms for inspection, besides outside exhibits, and we are at liberty to believe that, taking the several components of the exhibition all in all, they could not, in intrinsic merit, be equalled by any country in the world, though some other nations have the means for making more striking spectacular displays.

Unfortunately to-day the great Derby is run at Epsom, and this may have a prejudicial effect upon the number of visitors. This, however, can only be decided when the day is past. It is practically certain that the Temple Show will not be honoured by the presence of any members of the Royal Family, as has been the case in years past, and this loss can only be attributed to the above cause. We are glad to say that the show was opened in fine though dull weather.

Enter now the reporters. They have only a few hours in which to do the best they can, and as they have nimble pens or pencils, and printers' imps to rush to and fro, snatching the sheets from their fingers, we trust to their giving not a discreditable account of the great show, which opened yesterday, and of themselves as narrators, as they march along the avenues of beauty.

ORCHIDS.

Numerically the Orchid department of the exhibition shows a slight decline, as two or three exhibitors who last season staged excellent groups have this year fallen out. Baron Schröder's superb Orchids are missed, as are the *Odontoglossums* of Mr. Ellis. However, the difference in numbers is by no means sufficient to mar the success of the display as a whole; indeed, the spectacle is a singularly brilliant one. The central table of the large marquee, except a small space occupied by new plants, is full of Orchids from several well-known growers, while a portion of the second tent is similarly occupied. As is customary the vast majority of the plants are of comparatively well-known kinds, but some new ones are also to be seen, and several of them are of the first merit. *Cattleyas*, *Lælias*, *Odontoglossums*, and *Cypripediums* are all magnificently represented in the various stands, of which particulars are given below.

As has been the case at several Temple shows, Messrs. Sander & Co., St. Albans, occupy the most conspicuous position immediately within the large tent. Their display is always an imposing one, as the firm stages splendidly grown plants, carrying flowers of good size, substance, and beautifully coloured. It would be obviously impossible to mention every individual plant in either this or the other groups in the limited time at disposal, and it would serve no practical purpose. We shall, therefore, content ourselves with a selection of the most conspicuous, which included *Cypripedium callosum* Sanderæ, *C. bellatulum* album; *Cattleyas* Wagneri, Mendeli, Mossiæ, William Murray; *Oncidium ampliatum* majus, *Masdevallias*, *Odontoglossum crispum*, *Epidendrum Randi*, and others.

The group from Messrs. H. Low & Co., Bush Hill Park Nurseries, Eufield, is a very charming one, and the best use has been made of the space, and the well-grown plants, so far as effect is concerned. It is beyond question a very fine exhibit, and one which does credit to its producers. Amongst the many splendid plants comprised, a few of the choicest are *Cattleyas* Mossiæ, *M. Reineckiana*, Mendeli, Wagneri; *Lælia purpurata* Russelliana; *Odontoglossum crispum* in charming variety; *Cypripediums* Gertrude Hollington and Mastersianum; *Odontoglossum* Pescatorei, *Lælia elegans* Lowiæ, *Oncidium sphacelatum*, *Odontoglossum Dieu Donné*, a superbly coloured Mendeli, and *Dendrobium Dalhousianum* Salmonæ, a lovely variety that is unique.

The next stand to claim attention is smaller than either of the foregoing, but is none the less worthy of attention, for it is the result of an amateur's efforts. It is from Mr. Hislop, gardener to H. S. Leon, Esq., Bletchley, and is highly creditable. The several Orchids are examples of good culture, and we may enumerate as amongst the most praiseworthy

Cattleyas Skinneri, Mossiæ, and Mendeli; *Lælia purpurata*, *Dendrobiums*, *Vanda teres*, *Odontoglossums* crispum, and Pescatorei, *Cattleya Schroderæ* alba, *C. speciosissima* Ernesti, and *Cypripediums*.

Messrs. Charlesworth & Co., Heaton, Bradford, cannot be regarded as regular London exhibitors, though we occasionally see them at the fortnightly Drill Hall meetings, and they invariably stage effectively. Such is the case on this occasion, their examples of *Cypripediums* Schofieldianum, Rothschildianum, caudatum; *Cattleyas* Skinneri, Mossiæ, Mendeli, F. Denis, and Lord Masham; *Odontoglossums* crispum Princess, and cordatum; *Lælio-Cattleyas* Cinna-brosa, and radiata, *Oncidium*, *Masdevallias*, *Miltonia vexillaria*, *Vanda teres* being very fine.

Very beautiful is the assortment sent by Mr. W. Stevens, gardener to W. Thompson, Esq., the celebrated Midland amateur, from Walton Grange, Stone, Staffs. It is evident that all the gems of the collection were not disposed of at the recent sale, for we observed such excellent Orchids as *Odontoglossum crispum* Lily, Capartianum, Prince Charming, Dorothy, Thompsonianum, and fastuosum, Wilckeanum grandis, Andersonianum, excellens, and tripudians.

It is pleasant to observe that a London amateur is contributing to this unique exhibition of Orchids, for it proves that the plants are, to a certain extent, amenable to culture in towns. The group referred to is from Mr. J. Clarke, gardener to Ludwig Mond, Esq., The Poplars, Avenue Road, Regent's Park, who staged *Cattleya Mossiæ* Mondi, *Oncidium ampliatum* majus, *Odontoglossum* Andersonianum, *O. citrosimum*, *O. crispum*, and *Cymbidium Lowianum*.

The north of London is handsomely represented by two firms, the first to take our attention being Messrs. B. S. Williams & Son, Upper Holloway, who show in the charming style that has become characteristic of the firm. Though this particular group is really one of Orchids, the effect has been enhanced by the judicious admixture of graceful Ferns and Palms. Of the Orchids that here find a place the best are forms of *Odontoglossum crispum*, *Oncidium*, *Calanthes*, *Lælia purpurata*, *Cypripediums*, *Miltonia vexillaria*, *Lælia Latona*, *Vandas*, and several others.

So far as size is concerned the first amateur exhibitor is undoubtedly Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, whose arrangement is very imposing. It occupies a position at the end of the central tent, and attracts attention by the diversity and beauty of its many parts. As is customary, Mr. White has utilised numerous Orchids of botanical interest, several of which possess structural peculiarities that always take the attention of visitors. There are, of course, others of far showier character, and which do much to brighten the group. Perhaps the most conspicuous are *Miltonia vexillaria* in variety; *Cattleyas* Mendeli, Skinneri alba, Mossiæ, and M. Wagneri; *Lælia purpurata*; *Cypripediums* Lawrenceanum, *Hoo eræ* voluteanum, Curtisi, barbatum, Dautheiri, Eleanor, Olenus Burford var., and superbiens; *Odontoglossum crispum* in variety; several *Dendrobiums*; *Brassia verrucosa*; *Cymbidium Lowianum*, *C. tigrinum*; *Masdevallias*; the blue *Dendrobium* (*D. Victoria Regina*); *Aganisia cœrulea*, *Habenaria rhodochila*, and *Microstylis macrophila*.

A cleverly arranged group is one from Mr. W. H. Young, Orchid grower to Sir Frederic Wigan, Bart., Clare Lawn, East Sheen, who utilises his excellently grown plants to the best advantage. The "greenery" employed sets off the bright flowers of the Orchids in a very pleasing manner. *Cymbidium Lowianum*, *Lælia purpurata*, *Miltonia vexillaria*, *Cypripedium caudatum*, barbatum, Lawrenceanum, *Cattleya Mossiæ*, *C. Mendeli*, *Odontoglossum crispum*, *Cypripedium callosum* Sanderæ, several *Oncidium*s, and others were very charming.

The Orchids employed by Mr. G. Wythes, gardener to Earl Percy, Syon House, Brentford, are of a more homely character than are hundreds of others in the show. This is explained by the fact that they are cultivated for home adornment. Interspersed amongst them are foliage plants, and the group, though perhaps slightly crowded, is nevertheless a very creditable one. We observed amongst others *Cypripedium* Lawrenceanum, *Odontoglossum crispum*, *Cymbidium Lowianum*, *Cattleyas* Mossiæ and Mendeli, *Lælia purpurata*, with *Dendrobiums*, *Oncidium*s, and others in variety.

Mr. W. S. Buckill, gardener to Malcolm S. Cooke, Esq., Kingston Hill, S.W., shows a small group of Orchids in capital condition, which adds its share to the general display. This exhibitor stages some charming spikes of *Odontoglossum crispum* and Pescatorei, *Miltonia vexillaria*, a number of *Cymbidium*s, *Cattleyas*, *Masdevallias*, *Brassias*, *Cymbidium*s, and *Dendrobiums*.

The last exhibitor of Orchids to be noted as staging in the big tent is Mr. J. Cypher, the celebrated Cheltenham grower. He is the only representative from the West of England in the show, and his assortment is exceptionally fine. The grand plants carry healthy green leafage and splendidly developed flowers, that are of great substance and rich in colour. This latter feature is particularly observable in such specimens as *Lælia purpurata*; *Cattleyas* Mendeli, Mossiæ, and citrina; *Miltonia vexillaria*; *Odontoglossums* crispum, Halli, triumphans, cirrhosum, and luteo-purpureum; *Dendrobiums* in variety, *Oncidium Marshallianum*, *Anguloa Clowesi*, many *Cypripediums*, and others.

The great Belgian firm of Linden comes to the assistance of the Royal Horticultural Society with an exhibit of considerable extent. We are glad to observe that the system of staging that was adopted last year has been changed, and a much better effect is the result. The whole of the plants are species, hybrids, or varieties of *Odontoglossum*, with a number of plants of *Cypripedium* Lawrenceanum. The long graceful spikes of the former produce a very charming effect, and several of the forms, of which names cannot possibly be given, are of great merit.

In an earlier paragraph we named one of the two North London exhibits, and we turn now to the other from Messrs. W. L. Lewis & Co., Southgate, who are showing in their best style. The group is very showy, comprising as it does splendid flowers on healthy plants of *Oncidium*, *Lælia purpurata*, *Cattleya Skinneri*, *Cymbidium Lowianum*, *Cattleya Mossiæ*, *C. Mendeli*, *C. M. Amelia*, *Dendrobiums*; *Cypripediums* *Gertrude Hollington*, *grande atratum*, *Dayanum*, *Evenor*, with *Odontoglossums* and others. Smaller exhibits of Orchids came from one or two Continental and several home growers.

ROSES.

One of the features of the annual exhibition in the Temple Gardens for the past few years has been Roses, and this season's display appears to be quite equal, if not superior, to any of its predecessors. The queen of flowers attracts the attention of the visitor at different points, and each exhibit presents its own interesting and pleasing features. *Crimson Rambler* is again to the fore, displaying its sprays of brightness in almost every exhibit. A Temple without *Crimson Rambler* now would seem wanting, and though the variety is well known, it is none the less admired. Exhibitors at the great show have on former occasions shown what a Rose tree in a pot is capable of producing, and the reputation made is fully maintained. There are Roses in all forms in pots, besides fine stands of cut blooms, and it is only fair to the exhibitors, who are enumerated below, to say that they are individually and collectively a credit to the respective growers.

Mr. Charles Turner, Slough, occupies the same position as last year, and fills the end of the large tent with Roses and Carnations. Two points are conspicuously apparent in the exhibit—i.e., good taste in arrangement and superb quality in the plants and flowers. *Crimson Rambler* is represented in various forms, and it is in all respects in keeping with the surroundings. In addition to these there are superbly flowered specimens of *Céline Forestier*, *La France*, *Souvenir de S. A. Prince*, *Camille Bernardin*, *Francisca Kruger*, *Madame Lacharme*, *William Allan Richardson*, *Juno*, *Catherine Mermet*, *Marie Baumann*, *Madame Caroline Kuster*, *Madame Victor Verdier*, *The Bride*, and *Madame Abel Chatenay*. The surface of the group is undulating and pleasing, and Mr. Turner has made the best of his space without any undue crowding.

Roses are well shown by Messrs. Paul & Son, Cheshunt, who have made the best use of the space at their command by a pleasing arrangement of pot plants. Conspicuous in the exhibit is Messrs. Paul's new introduction, a rose coloured *Crimson Rambler* bearing the name of *Psyche* (see fig. 83, page 443). Elegance is one of the characteristics of this fine exhibit, and the plants are dispersed to show their beauty to advantage. It would be difficult to overrate the merits of superb standard specimens carrying large flowers, and among the numerous varieties shown in different forms are *Charles Lawson*, *Ulrich Brunner*, *Juno*, *Crimson Rambler*, and others. Altogether, the group is of an exceedingly high order of merit.

Messrs. F. Cant & Co., Colchester, show a collection of Roses in pots, mostly small plants. Teas are well represented in *Souvenir de S. A. Prince*, *Souvenir d'un Ami*, *Madame Falcot*, *Anna Olivier*, and others. *Thalia* is a pretty white *Polyantha* Rose, and is given a prominent position. The exhibit is principally one comprised of dwarf plants, and if further evidence is wanted of the usefulness of the Rose as a small decorative plant it is given in Messrs. Cant's group.

A very tasteful exhibit is that hailing from the nursery of Mr. W. Rumsey, Waltham Cross. Among the varieties represented are *Crimson Rambler*, *The Queen*, *Magna Charta*, *Ferdinand de Lesseps*, *Madame Hoste*, *Etoile de Lyon*, *Souvenir d'un Ami*, *Madame Scipion Cochet*, *Niphotos*, and *Comte de Mortemart*. In addition to the plants in pots there are numerous stands of cut blooms along the front containing many of the best known varieties.

Canterbury has become famed for Roses through the skill of that well-known grower, Mr. G. Mount, and this year his effort to maintain his high reputation is in every respect creditable. Beautifully flowered plants of *Crimson Rambler* are placed along the back of the exhibits, interspersed with *Acers*, the light foliage of which is a pleasing contrast to the crimson flowers. Principal among the cut blooms are fresh charming specimens of *Anna Olivier*, *Madame Marie Hoste*, *Niphotos*, *Mrs. John Laing*, *Catherine Mermet*, *La France*, *Baroness Rothschild*, *Ulrich Brunner*, *Général Jacqueminot*, *Madame Gabriel Luizet*, *Duke of Edinburgh*, *Perle des Jardins*, and *Fisher Holmes*.

Near to the entrance of the large tent is a fine display of Roses, for which Messrs. William Paul & Son, Waltham Cross, are responsible. There is no lack of variety in form and colour, and in pots and stands Roses of superior quality are exhibited. *Crimson Rambler* is dotted here and there, and proves a pleasing contrast to the profusion of lighter coloured varieties. Very beautiful are the flowers of *Sylph*, *Clio*, *Mrs. John Laing*, *Crimson Queen*, *Caroline Testout*, *Medea*, *Ulrich Brunner*, *Spenser*, and *Duke of York*. A feature in the exhibit is Messrs. W. Paul's new Hybrid Tea Rose, a strong scented, large flower of a rich pink. Taken as a whole, the plants and flowers are of excellent quality, and quite up to the average of the firm's former efforts.

A unique Rose exhibit is that of Mr. John Russell, Richmond, Surrey, which is composed entirely of plants of the single red Rose *Carminé Pillar*. Very pleasing are the light elegant flowers peeping from a mass of bright green, and in its own particular section the variety is one not wanting in merit.

PLANTS AND FLOWERS.

Beautifully tinted foliage and bright flowers, the like of which are rarely seen, now fill the marquees in the Temple Gardens. Some are new, as, for instance, the group of *Acalypha Sanderi*, shown by Messrs. F. Sander & Co., St. Albans, the bright rosy spikes of which attracted general admiration. Others are old, but none the less attractive. At one point there are delicately tinted *Caladiums*, at another *Crotons*, and at a third the visitor may see what experts can do with *Begonias*. There are exhibits of Ferns comprising endless variety, gaudy masses of *Calceolarias*, *Carnations* of gigantic dimensions, groups of decorative flower and foliage plants, beautiful *Clematises*, and Orchid-like *Cannas*. There are colour and variety sufficient to please all tastes, and the lover of hardy plants and flowers finds much to attract his attention. Long ranges of tabling are occupied by the members of this section, some bright and attractive, and others diminutive and inconspicuous yet possessing charms entirely their own. How to make the most of the space at command has been considered by the exhibitors, with a result that this important section of the show is as good in arrangement as circumstances will allow.

Rhododendrons in quantity are well shown by Mr. J. Waterer, Bagshot. Diversity in colour is a pleasing feature, and the varieties are dispersed with taste. Among the sorts shown are *album grandiflorum*,

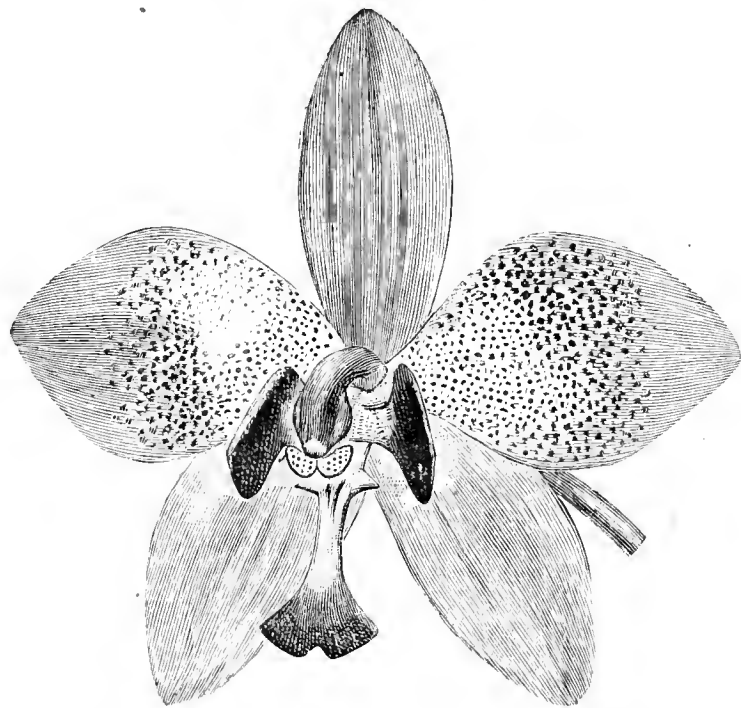


FIG. 82.—*SPATHOGLOTTIS AUREO-VELLARDI*. (See page 445.)

Kate Waterer, *B. W. Elliott*, *Pink Pearl*, *Crown Prince*, *John Walter*, *Sappho*, *Countess of Normanton*, *J. Marshall Brooks*, *Princess Mary of Cambridge*, *Helen Waterer*, *Mrs. W. Agnew*, and *Duchess of Bedford*. Many of the trusses are remarkably fine, and show the full beauty of the *Rhododendrons*, both in standard form and as dwarf plants.

Messrs. J. Laing & Sons, Forest Hill, have a fine display of well grown *Caladiums*. In spite of a little flatness in arrangement the elegantly tinted foliage shows itself to advantage, and very pleasing are the colours of *Rose Laing*, *Flambeaux*, *John Laing*, *candidum*, *Marquis of Camden*, *Baron Adolphe de Rothschild*, *William Marshall*, *Charmagne*, *Sir Wm. Broadbent*, and *Gaston Chandon*. *Caladiums* with giant leaves are placed as a background, and gradually the size decreases till the front row, which is composed of varieties with diminutive foliage.

A very interesting group of plants from the nurseries of Messrs. Jas. Veitch & Sons, Chelsea, occupies a position in the large tent. The tall spikes of *Eremurus himalaicus* are dotted about in the exhibit, and rise from a groundwork of *Hydrangea japonica rosea*, *Rhododendrons*, *Azalea mollis*, *Azalea pontica Fama*, and *Gloria Mundi*, together with numerous other charming flower and foliage plants. The arrangement is light and elegant, and the group is one of the most interesting in the show, containing a happy arrangement of colour in conjunction with the excellent quality always seen in the firm's exhibits. To say that the Chelsea firm are showing *Caladiums* means that the exhibit is one of high order. Some of the specimens are of remarkable size, and in each one there is a stamp of superior quality. In the centre is a grand example of *Madame John Bosc* and others of superior character are *Sir Henry Irving*, *Mrs. Harry Veitch*, *Gaspard Crayer*, *Lord Derby*, *Williamsi*, *Clio*, *candidum*, *Silver Cloud*, *Lady Stafford Northcote*, *Henry Lovatt*, *Princess of Teck*, and *Duchess of Fife*.

Messrs. J. Peed & Sons, Roupell Park Nurseries, Norwood, are represented by a fine collection of *Caladiums*. The delicate colouration of the foliage and the healthy character of the plants are highly creditable to the firm. There is variety enough to suit the most critical taste, and among the most conspicuous are *Sir William Broadbent*, *Mrs. Harry Veitch*, *Princess Royal*, *Lady Mosley*, *Lillie Burke*, *Ibis rouge*, *Lord Rosebery*, *Princess of Teck*, *Duchess of Teck*, *Golden Queen*, *Marie*

Freeman, Louis Van Houtte, and John Laing. Tall Palms form a background, and Maidenhair Ferns are interspersed among the mass of multi-coloured foliage.

A small but excellent group of Carnations is staged by Mr. J. Jennings, gardener to Leopold de Rothschild, Esq., Ascott, Leighton Buzzard. The exhibit consists entirely of pink Malmaisons, and the remarkably fine flowers and healthy foliage are evidence that the plants have been subject to proper culture and suitable conditions.

One corner of the large tent is beautified by a superb collection of miscellaneous plants set up by Messrs. W. Cutbush & Sons, Highgate. One feature is the magnificent Malmaison Carnation, and another is the taste shown in the general arrangement. The white flowers of *Lilium Harrisii* are dotted about and make a pleasing undulating outline. Of *Azalea mollis* there are well flowered specimens, and among other plants which make up an effective group are yellow Callas, Ericas, and Crimson Rambler Roses, and along the front an exquisite finish is made with graceful *Isolepis* and Maidenhair Ferns. The arrangement of the group differs from that of any other in the show, and reflects credit on the firm.

Messrs. G. Jackman & Son of Woking have a fine collection of their hardy Hybrid coccinea Clematis. They are all charming, some climbing over wooden arches, and others trained in balloon form. Among the many varieties are Duchess of Albany, Countess of Onslow, Duchess of York, Grace Darling, Sir Trevor Lawrence, and Admiration. Seasonable hardy flowers are also shown in another tent by this firm.

Mr. W. Iceton, Putney, by his exhibit fully maintains his reputation as a grower of decorative plants. The background is an arrangement of Palms and other decorative specimens, and along the front are elegant little Caladiums, Kalosanthes, Oranges bearing fruit, Crotons, Ericas, and Ferns.

The principal feature of Messrs. F. Sander & Co.'s unique exhibit is their new introduction, *Acalypha Sanderi*, which is shown to advantage, and displays its merits as a decorative plant. Another feature in the exhibit is *Caladium lami Schwartzii*, a beautiful form of distinct habit. *Dracenas Godseffiana*, *Van der Bilde*, and *Sanderiana* are also conspicuous; and another striking plant is *Acalypha macrophylla maxima*. In addition to the above there are novelties in the form of Anthuriums, and every plant in the group possesses some interest.

Though Roses are the chief feature of Mr. Chas. Turner's exhibit, Carnations and Pelargoniums are well worthy of mention. Amongst the latter are large well-flowered specimens of Prince Leopold, Princess Teck, Spotted Beauty, Alice, Joe, and Mystery. Carnations are bearing large blooms of such varieties as Sir E. Wood, Delight, Companion, Ernest, Queen of Fancies, Sir Guy, Knight Errant, May Queen, and Delight. An interesting group of Maples hails from Messrs. T. Cripps and Sons, Tunbridge Wells. The plants are mostly dwarf, and well furnished with elegant foliage of varied hue, tints, and form.

Tuberous Begonias of the best quality are always shown at the Temple Show, and this year Mr. H. J. Jones, Lewisham, exhibits the cream of his well-known collection. From one end to the other there are none but superb flowers, both single and double. Among the most telling of the former are May Queen, an elegant flower; Mrs. Beckett, Star, Dr. Shaw, and Dorothy Linford. The flowers are borne on stout footstalks, and the foliage and general character of the plants show signs of excellent cultivation.

A fine display of colour is noticeable in the exhibit of Calceolarias, for which Messrs. J. James & Son, Farnham Royal, are responsible. The plants are dwarf, compact, and pictures of good health, while the flowers individually are large, and in a mass of colour there is ample evidence that the strain is a superior one.

Tuberous Begonias from the nurseries of Mr. J. R. Box, Croydon, make a brilliant display. Both single and double flowers are large and of fine substance. Among the former Canary, Hecla, Magnitude, Juliet, Proserpine, and Belona are conspicuous; and the most striking doubles are Eureka, White Lady, Defiance, Miss Lennard, Harmony, The Bride, and Josephine. Palms and Ferns are used to advantage in the arrangement, which is elegant and tasteful.

The well-known Swanley firm of Messrs. Cannell & Sons show an effective exhibit, comprised of Gloxinias, Begonias, Calceolarias, and Cannas. Among the former there are flowers of many delicate tints, conspicuous amongst which are *Petunias Duchess of York*, *Prince of Wales*, and *White Queen*. The Calceolarias are conspicuous for large flowers and dwarf sturdy habit. Begonias, both single and double, are quite up to the reputation of the firm. A special word must be given to the Cannas, which are superb. Large flowers of varied colour crown the sturdy spikes, and among the most telling varieties are *Salmon Queen*, *Rosalind*, *Leon Vassiliere*, *Florence Vaughan*, *Duchess of York*, *Italia*, *Sunset*, *Glow*, *Aurore*, *P. J. Berkman*, *Pioneer*, *Paul Bruant*, *H. Irving*, *Paul Meylan*, and *Incendie*.

A fine exhibit of Ferns is staged by Messrs. J. Hill & Son, Edmonton. As a background there are fine specimens of *Asplenium caudatum* and *nidus-avis*, *Davallia fijiensis plumosa*, *Pteris tremula Smithiana*, *Adiantum cuneatum* and *formosum*, *Nephrolepis exaltata*, and others; and pleasingly arranged in front are *Adiantum cardiochlena*, *scutum*, *roseum*, *macrophyllum*, and *cuneatum grandiceps*. *Lygodium scandens*, the climbing Fern, is conspicuous; and among other forms are *Doryopteris palmata*, *Lastrea aristata variegata*, *Blechnum brasiliense*, *Asplenium ornatum*, and *Davallia tenuifolia stricta*.

Mr. L. De Smet Duvivier, Ghent, Belgium, exhibits a small collection of Anthuriums, containing several curious and many elegant varieties. Among those shown are *Prince Albert*, *Prince of Wales*, and *Baron Schröder*.

Messrs. R. & G. Cuthbert, Southgate, contribute a varied collection of Ghent and mollis Azaleas, many of which are very beautiful. This adjective is rightly used in describing Anthony Koster, a fine yellow form; Velasques, a charming white; Dr. Pasteur, Apellus, Chevalier de Reali, Baron Pycke, General Vetter, and Jeannette Siemens. *Azalea Daviesi* is a charming white and cream flower, and shows conspicuously at one end of the group.

Messrs. J. Veitch & Sons, Chelsea, make an effect with a superb collection of Crotons, which makes a pleasing contrast to the masses of flowers all round. All the plants show signs of good culture, and among the most telling varieties are *Queen Victoria*, *Flamingo*, *Aigburth Gem*, *Thomsoni*, *Albert Truffaut*, *Warreni*, *Sunshine*, *Johannis*, *Prince of Wales*, and *Reedi*. Interspersed among the plants are Maidenhair Ferns, which help in making a most effective arrangement.

Delicately coloured Japanese Maples are shown by Messrs. W. Fromow and Sons, Chiswick. Among these are dotted flowers of *Lilium Harrisii*, which add to the effect. Very elegant is the foliage of many of the varieties of *Acers*, conspicuously *A. dissectum palmatifidum*, *A. dissectum purpureum*, *A. palmatum tricolor*, and *A. palmatum variegatum*.

The Worcester Clematises have come to be looked upon as regular attendants at the Temple Show, and this year they are as striking as ever. Messrs. R. Smith & Co. have an exhibit equal to any of their former ones, and charming indeed are the superbly flowered specimens of *Madame Van Houtte*, *Countess of Lovelace*, *Enchantress*, *Blue Gem*, *Marie Lefebvre*, *Princess of Wales*, *Snow White*, *Jackmanni*, and *Madame Van Houtte*. Messrs. R. Smith's superb exhibit gives abundance of evidence of what can be done with Clematises in pots, and shows the superior qualities of these plants when well grown for decorative purposes.

Messrs. Kelway & Son, Langport, are exhibiting Pæonies and Pyrethrums in pots, which make an effect, though the beauty of the latter is not enhanced by the conspicuousness of the stakes. It is not often that herbaceous Pæonies are shown in pots, and the fine flowers of *Dorothy*, *Lady Lilian Ogle*, *Admiral Dewey*, *Chelandry*, *W. B. Yeats*, *Joan Seaton*, *Mrs. Geo. Bunyard*, and *Wei-Hai-Wei* are conspicuous in size and quality of the blooms. In another tent the firm fills a large space with cut flowers in pleasing variety. Among these is a beautiful crimson Tree Pæony *Julius Cæsar*, and another of darker tint bears the name of *Henry Irving*. *Jean de Reszke* is a pure white, and contrasts pleasingly with the surrounding brilliant colours. In addition to the Pæonies there are fine spikes of *Delphiniums*, showy *Amaryllis*, *Pyrethrums* in variety, and other herbaceous flowers.

A long expanse of tabling is occupied with the interesting exhibit of hardy flowers from Messrs. Barr & Sons, Covent Garden, who, as usual, make a brilliant display. Fine spikes of *Eremurus* are conspicuous, and are very attractive, showing above a bewildering mass of variety in floral beauty. Here is a little clump of *Centaurea cyanus Victoria*, with its small blue flowers. Further on a diminutive rockery contains much that is interesting, as many of the tiny flowers could not be shown under any other conditions. Further still is a bunch of fine Lily of the Valley named *Fortuna*, surrounded by hardy flowers of every description, and at the end of the collection are staged Tulips and Irises. Lovers of hardy flowers will find much to interest them in Messrs. Barr's superb exhibit, and it is impossible to give everything the attention they merit in a cursory glance.

Messrs. J. House & Son, Westbury-on-Trym, show a fine collection of Pansies and Violas. The latter are made up in sprays, but many of the former are in small pots, and among other varieties *Prince of Wales*, *Iona*, *Stophill Gem*, *Mrs. R. K. Mitchell*, *William Haig*, *White Empress*, and *A. J. Rowberry* are very charming.

Messrs. J. Peed & Sons have a large exhibit of Gloxinias tastefully arranged with Maidenhair Ferns. The habit of the plants is dwarf and sturdy, and the colours varied and pleasing. Among the named varieties *Mrs. John Peed*, *Mrs. W. Weaver*, *Mrs. G. W. Sawday*, *Jasper*, *Queen of My Heart*, *Princess of Wales*, *Petunia*, *Duchess of York*, *Beacon*, *John Peed*, *Majestic*, and *Ethel*, are worthy of mention.

Diminutive alpine and other hardy flowers are shown in the exhibit sent from Messrs. Paul & Sons' Cheshunt nurseries. Cannas are remarkably fine in flower, some of the best varieties being *Iona*, *Miss Elsie Perkins*, *Mosaic*, *Lady Faudel Phillips*, *Golden Shower*, *Distinction*, *Mr. James Bailey*, and *Comet*.

The space allotted to Mr. M. Prichard, Christchurch, Hants, is devoted to hardy flowers. Conspicuous in the group are *Pyrethrum Mrs. Bateman Brown*, *Geum miniatum*, *Irises* in variety, *Eremurus robustus*, var. *Elwesianus*. *Aquilegias* are shown in variety, as also are *Pyrethrums*, *Trollius*, *Gentianas*, *Saxifragas*, and *Phloxes*, the whole making up a fresh-looking and varied collection. The Jadoo Fibre Company have an exhibit of plants grown in Jadoo fibre.

Hardy flowers in profusion are shown by Mr. T. S. Ware, Tottenham, these occupying the end of one of the tents. Conspicuous in the exhibit is a fine spike of *Eremurus Elwesianus*, which is very attractive. The exhibit also contains *Irises* in variety, *Saxifragas*, *Aubrietias*, *Pyrethrums*, *Trilliums*, *Alyssums*, and many other hardy flowers shown to good advantage. The firm also makes a grand show with Begonias, mostly double, and all superior in size of flower and quality. Among those attracting most attention are *Duke of Kent*, *Beauty of Belgrove*, *Prince of Wales*, *Her Majesty*, *Triumph*, *Mrs. S. Pope*, *Eclipse*, *Mr. Dunbar Wood*, *Mr. James Portbury*, *Brilliant*, and *Rosebud*. The most telling singles are *Mrs. Sharp*, *Bexley White*, *Belle Cole*, *Muriel*, *Sunset*, and *marginata*.

A pleasing break amid masses of floral beauty is the group of Ferns shown by Mr. H. B. May, Edmonton. The variety is bewildering, and the collection interesting to all Fern lovers. One of the most beautiful Ferns in the exhibit is *Phlebodium Mayi*, which was honoured with a

first-class certificate. Attractive also are the fine specimens of *Adiantum scutum*, *Davallia fijiensis robusta*, *Asplenium nidus*, and *Pteris cretica* Mayi. Giant Elks-horns are dotted about, and in the complication of variety and character there is much in Mr. May's exhibit that cannot fail to interest.

Mr. William Sydenham shows how Pansies and Violas can be grown in the neighbourhood of Birmingham. There are Violas shown in designs, and as such they are very effective; and conspicuous are sprays of Violas Stephen, Mary Stuart, Charm, Rover, Blanche, William Tell, Lucy Franklin, and Pembroke.

Ferns in charming profusion are staged by Messrs. W. & J. Birkenhead, Sale. They are mostly in small pots, and display an endless variety. All are elegant, and many of the forms extremely graceful, comprising some rare varieties, as well as others that are better known. Under a glass case provided for their accommodation is an elegant assortment of Filmy Ferns in variety, and in the exhibit the firm fully maintains its high reputation as Fern growers.

Messrs. J. Backhouse & Son, York, have their usual tasty exhibit of hardy alpine peeping from the crevices of a diminutive artificial rockery, where they look very charming. There are pretty blue Gentianas, Saxifragas, Primulas, Orchises, Campanulas, Iberises, and many others showing their diminutive forms and pleasing tints of colour. The firm also shows a few Orchids interspersed with elegant foliage plants, the effect of which is very pleasing. Not the least interesting are the firm's hybrid Water Lilies, displaying variety in this now popular family. The exhibit, as a whole, is tastefully arranged and quite up to former efforts of the firm.

Cacti are shown in variety by Mr. G. J. Pritchard, Forest Gate, London, E. Among them there are many curious members of this family, showing their varying habits, and attracting much attention on the part of visitors. Mr. F. Perkins, Leamington, shows plants of a yellow Carnation Primrose Queen, which, however, lacks scent. This appears to be the only defect, as the variety is free and effective. Messrs. Geo. Jackman & Son have an effective group of hardy flowers, including Pæonies, Pyrethrums, Cytisuses, Lychnises, and Irises. The plants are not crowded, and the group altogether is a pleasing one.

Mr. Amos Perry, Winchmore Hill, has an exhibit of perennials, in which the flowers are a little packed. Many familiar hardy plants are noticeable, including Geums, Phloxes, Lupins, Campanulas, Irises, Anemones, and Aquilegias. Messrs. A. W. Young & Co., Stevenage, are represented by a mass of new double Zonal Pelargonium King of Denmark, a collection of hardy flowers, and *Lilium Harrisii*, and an exhibit of hardy alpine plants. The firm also shows plants of Gloxinias of a good strain, and bunches of Pansies, which are much too crowded to be effective. Messrs. F. Miller & Co., Fulham Road, London, have an interesting exhibit of *Mimulus*, *Mignonette*, Pansies, *Lobelia*, and single *Petunia*, which are very attractive.

Very choice are the hardy flowers from Messrs. R. Wallace & Co., Colchester. There are dwarf Lilies of the *Thunbergianum* types, hardy *Cypripediums*, Geums, showy *Hemerocallis*, diminutive *Calochortuses*, and *Watsonias*. *Lilium rubellum* is a beautiful flower, and gained a first-class certificate. Flowers of *Tulipa persica* are included in the exhibit, as also are *Ixias* in variety, Irises of various forms and variety, and many others. Messrs. Wallace's exhibits at the Temple are always interesting, and in this respect the one mentioned is no exception. Mr. J. Douglas, Great Bookham, has a small exhibit of Auriculas, amongst which Dean Hole, Salamis, Green Frog, In Memoriam, and Delphi.

From Messrs. Dicksons, Ltd., Chester, come plants of an elegant *Dracæna* called Kippsi, a variety apparently suitable for table decoration. Mr. A. Tulett sent plants of a new sport from the double Zonal Pelargonium V. Raspail. Mr. John Pigg, Royston, Herts, has plants of a new Fancy Pelargonium called Agnes Alma. Messrs. J. Laing & Son have a superb exhibit, comprising tuberous Begonias and Gloxinias. Among the latter both singles and doubles are well represented, the flowers being large and of excellent substance, while the plants are healthy and sturdy in habit. The same may be said of the Gloxinias, amongst which there is a diversity of striking colours.

Messrs. Jas. Veitch & Sons make a superb display with their Gloxinias. The flowers are large and effective in colour, comprising such varieties as Mars, Cygnet, Beacon, Modesty, Virginalis, Mona, Columbus, Cordelia, Seraph, and others. The firm also fills a large area with hybrid *Phyllocactus*. Very showy are the blooms of these plants, and amongst the most effective are Adonis, Dorian, Romeo, Cato, La Belle, Isabel Watson, Norma, and Agatha. Maidenhair Fern is used in the arrangement, which is very striking and showy.

Outside of the tents Mr. J. Russell, Richmond, has set up a collection of hardy foliage plants, including Acers, Ivies, and Euonymuses, which are very attractive. Messrs. J. Waterer & Sons, Ltd., also show a fine collection of Japanese Maples, including many of the best varieties.

The whole of the central staging in tent No. 1 is in the possession of Messrs. J. Carter & Co., High Holborn, who have a very striking miscellaneous exhibit. The table is arched over, the name of the firm being interwoven in the greenery. Beneath are examples of the firm's specialities, including amongst the flowers some beautiful Gloxinias, *Calceolarias*, Lilies, and *Petunias*, with Palms and Ferns. Peas, Tomatoes, and Cucumbers are conspicuous in the vegetable portion of the stand. The Anglo-Continental Guano Works, 30, Mark Lane, exhibit a group of Gloxinias, presumably grown with the aid of the guano. They are not of very great merit.

Mr. G. Edom's Tulips, from Epsom, are gorgeously beautiful to-day (Wednesday) but to-morrow it is probable that much of their beauty will have departed. There are breeder and rectified flowers of bybloemens,

bizarres, and roses. The form of the flowers is as a rule good, and the colours rich.

No one shows hardwooded plants in better condition than do Messrs. W. Balchin & Son, Hassocks, and their exhibit in the Temple is worthy of their reputation. Grandly flowered plants of *Browallia alata*, *Boronia serrulata*, *B. heterophylla*; *Ericas* *Spenceri*, *candidissima*, *Cavendishi*, *perspicua nana*, *ventricosa rosea*, and *v. magnifica*; *Leschenaultia biloba major*, and *Genetyllis tulipifera*, are in mass.

Mr. John Forbes, Howick, is known to all as an excellent grower of plants, and the stand he has arranged is just such as anyone would expect him to show. It is composed entirely of Carnation Yule Tide, and Violas and Pansies in variety.

Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, are represented by an arrangement of plants on a rockery, in the composition of which is displayed much taste. At each end of the rockery are Rhododendrons, Violas, Irises, and Pæonies. Of the Violas the best are J. B. Riding, Iona, Annie King, Duchess of Fife, Mars, Countess of Hopetoun, The Mearns, Dawn of Day, Blue Gown, H. W. Stewart, and Lord Elcho.

Brightly beautiful are the Azalcas from Messrs. M. Koster & Sons, Boskoop, Holland. Unfortunately they are shown as cut trusses, placed very flat in boxes of moss. This greatly detracted from their appearance. The colours are rich, and the form of the flowers excellent. Messrs. Dicksons, Ltd., Chester, show the new tree Carnation, Duchess Consuelo, a fine yellow.

Mr. F. G. Foster, Brockhampton, Havant, staged a collection of Sweet Peas, which comprised a number of new varieties shown rather too thinly for the best effect. Very charming are Blanche Burpee, Waverley, Lady Mary Currie, Duchess of Sutherland, Royal Rose, Lady Nina Balfour Colonist, and Daybreak.

Messrs. Fisher, Son & Sibray, Ltd., Handsworth, Sheffield, occupy a considerable amount of space out of doors with a group of miscellaneous ornamental foliage plants. The examples shown are well grown, and include *Acers* *Leopoldi*, *polymorphum purpureum*, *linearilobum atro-purpureum*, *rufinerva*, *septemlobum elegans purpureum*, *reticulatum*, and *rubrifolium*; *Cornus siberica elegantissima*; *Quercus macrophylla* and *concordia*; *Betula purpurea*, several Irises, Weigelas, Euonymuses, and others.

Mr. V. N. Gauntlett, Redruth, is exhibiting in the gardens an extensive collection of Bamboos. There are several distinct forms, but the specimens are not in the best state for showing the graceful beauty of these plants. Messrs. Paul & Son, Cheshunt, show a bed of Bamboos out of doors. The plants are in capital condition. A few Rhododendron seedlings are also included in group.

DECORATIVE EXHIBITS.

The art of floral decoration is one that has advanced by leaps and bounds during recent years. At all large shows exhibits of floral designs attract much attention, as the brains of skilled decorators are continually inventing new features. Under canvas, in the Temple Gardens, there are at present works of art in the way of floral decoration, and many of our leading firms have put forward their best efforts. These never fail to please, and judging from the interest shown, particularly by the ladies, the exhibits of this character are not lacking in admirers.

The Women's Gardening Association, Sloane Street, have an exhibit comprised of bouquets and floral arrangements. Miss Edith Langton, Swanley, has a pretty table decoration formed of Spanish Irises and variegated Grasses; Mr. W. G. Parkin, Sheffield, shows a table decoration of Violas and other flowers; Miss Dalton, Ludgate Hill, London, shows floral decoration, as also does Miss F. West Bradley, Gipsy Hill, S.E.

Bouquets and wreaths are staged by Moyses Stevens, Belgravia, in the form of a lovely harp of Orchids and Narcissi. Baskets of pink Pæonies and *Lilium Harrisii*, and a beautiful wreath of choice flowers.

Mr. Seale, Sevenoaks, shows floral arrangements, including wreaths, crosses, and other designs of simple flowers and foliage. The decorations on either side are formed of the rarest and choicest of flowers, but Mr. Seale shows that simple flowers can with advantage be used for the same purpose. Very graceful and beautiful are the floral decorations staged by Messrs. Perkins & Son, Coventry. Huge shower bouquets of Orchids are exceedingly beautiful. Baskets of the same flowers, and others of Roses are perfect examples of taste and elegance, and quite equal to the wide reputation of the firm.

Mr. J. Prewett, Bayswater, has a most elegant table decoration formed of Fancy Pelargoniums and light foliage, the effect of which is very pleasing. Messrs. Jones & Sons, Shrewsbury, show a tasteful arrangement of flowers. Bouquets of Carnations, Orchids, and Violas are represented, as well as baskets of Sweet Peas, Roses, and Irises, all set up to good advantage. Mr. L. H. Calcutt, Stoke Newington, shows a magnificent decoration composed of Orchids, Lilies, and greenery, in a large epergne surrounded by smaller arrangements of Marguerites, Spanish Irises, Cornflower, and Ferns. The exhibit shows not only the beauty of the flowers, but also the suitability of the stands for table decoration.

A charming display is made by Messrs. B. S. Williams & Son, Piccadilly and Holloway. There is a beautiful and gigantic basket of Orchids, a basket of large Carnations, a mirror surrounded with white Narcissus, lightened with delicately tinted Orchids. One bouquet is a mass of scarlet Geraniums and Anthuriums, another is a dream of Lily of the Valley, white Roses, and Odontoglots, and in all the florists' art is fully displayed.

CERTIFICATES AND AWARDS OF MERIT.

Aculypha Sanderi (F. Sander & Co.).—This is a plant that will prove of the greatest decorative value. It can be had in a dwarf state or as standards, and is equally floriferous in both forms. The bright rose spikes are from 12 to 15 inches long and about three-quarters of an inch in diameter. The spikes are produced from the axils of the leaves. (first-class certificate).

Anthurium Scherzerianum Senateur Montiflore Leves (De Smet Duvier).—This is a superb variety with a medium-sized spathe of a cream colour spotted heavily with brilliant scarlet (award of merit).

Apple Ontario (Bunyard & Co.).—An American variety of handsome appearance. It is of large size and very distinctly ribbed. The eye is open and deeply set in a furrowed basin. The stalk is long and deeply inserted. It partakes largely of the character of the old Maltster (award of merit).

Auricula Snowdrop (R. Dean).—This is a double white flowered Auricula, and is very striking. The flowers are of good size and pure white in colour (award of merit).

Begonia Mrs. Dunbar Wood (T. S. Ware).—A beautiful double-flowered variety of good shape; the colour is rich apricot (award of merit).

Caladium L'Ami Schwartz (F. Sander & Co.).—A most distinct Caladium. The leaves are broad at the base and have a sharp point. There is a margin of green all round the leaf (award of merit).

Caladium Guaratinguetor (J. Laing & Sons).—A handsome crimson-scarlet variety, with edging of dark green (award of merit).

Cattleya Fernand Denis (Charlesworth & Co.).—This is a hybrid from a cross between *C. Acklandiae* and *C. gigas*. The narrow rose coloured sepals have deeper rose spots at the tip, which are absent from the broad rose hued petals. The crimson lip is of immense width, and has a cream coloured patch in front of the pink throat (first-class certificate).

Cattleya Mendeli Oakes Ames (H. Low & Co.).—A superb variety, marvellously rich in colour. The sepals and petals are rich rose, the latter having a bright crimson patch on the tips. The handsome lip is velvety maroon crimson. The throat is yellow, with crimson veins (first-class certificate).

Cattleya Mendeli Mrs. E. V. Low (H. Low & Co.).—For form and substance this Mendeli must take a high place. The colour of sepals and petals is very pale blush. The broad lip is crimson with white fimbriations, and a bright yellow throat (award of merit).

Dendrobium Dalhousianum Salmoena (H. Low & Co.).—This can best be described as a very pale buff form of the well-known type. It is said to be the only variety known (first-class certificate).

Eremurus Elwesianus (T. S. Ware).—This is a superb Eremurus. The spike of pale salmon rose-coloured flowers is about 6 feet high (award of merit).

Holly Golden King (Little & Ballantyne).—A very handsome Holly, that will certainly attain to great popularity. The leaves are large, bright green in the centre when young, deepening with age, and with a bright golden edge. The plant is of very vigorous habit (award of merit).

Licuala Jemenceyi (F. Sander & Co.).—A Palm that ought to be of value, as the leaves are of a bright green colour, and the habit of the plant is good (first-class certificate).

Laelio-Cattleya intermedia flava Golden Gem (Charlesworth & Co.).—This is a lovely variety. The sepals and petals are rich yellow, as is the inner portion of the throat. The front lobe a peculiar shade of orange crimson (award of merit).

Laelio-Cattleya Admiral Dewey (Charlesworth & Co.).—A bigeneric hybrid, resulting from a cross between *Cattleya Warneri formosa* and *Laelia elegans Mastersi*. The flower is very handsome. The prevailing colour is rich purplish rose, the broad lip being bright crimson (first-class certificate).

Lilium rubellum (R. Wallace & Co.). One of the most distinct Liliums in cultivation. The colour is pale pink, and the trumpet short and widely expanded (first-class certificate).

Mitonia vexillaria Empress Victoria Augusta (Baekhouse & Son).—A brilliant-coloured variety. The broad lip is very intense rose, the basal portion being pure white. The sepals and petals are also pure rose (award of merit).

Mitonia Bleiana rosea gigantea (Jules Hye).—An immense flower, of which the prevailing colour is white, faint flushed with rose on the lip. The sepals also are slightly tinged, while the petals are deep purplish rose at the base (award of merit).

Odontoglossum crispum × *Harryanum* (C. Vuylsteke).—A hybrid, of which the parentage is not given. The cream coloured sepals and petals are almost wholly brown at the base. The broad lip is cream at the front, with brown blotches and spots at the base (first-class certificate).

Odontoglossum Charlesianum (A. Madoux).—This is a charming Orchid, of which the ground colour throughout is cream, and the abundant spots and blotches bright brown (award of merit).

Odontoglossum crispum decorum (L. Linden).—In form this crispum promises well. The blotch of bright chocolate on the petals and the mass of similarly coloured spots on the sepals are very fine. The lip is of good form (award of merit).

Odontoglossum Pescatorei bellatulum (L. Linden).—Though the flowers are somewhat starry, this variety is very beautiful on account of the brilliance of maroon patch on the sepals and the spots on the petals and lip (award of merit).

Odontoglossum crispum zebrinum (L. Linden).—A lovely variety. The

cream coloured base is spotted, blotched, and barred with crimson brown (award of merit).

Odontoglossum venustum (L. Linden).—The cream ground colour of this handsome *Odontoglossum* is almost obscured by the bright brown of the spots on the petals, lip and upper sepal, and the bars and blotches on the lower sepals (first-class certificate).

Pæony Julius Caesar (Kelway & Son).—A superb variety of the tree section. The colour is an intense crimson (award of merit).

Pæony Henry Irving (Kelway & Son).—This, too, is of the tree section; the colour is deep blackish crimson (award of merit).

Pæony Jean de Reszke (Kelway & Son).—The large flowers of this splendid *Pæony* are pure white (award of merit).

Phlebodium Maji (H. B. May).—This is a superb Fern that has the appearance of being a seedling from glaucum. The fronds are handsomely divided, and of a glaucous grey hue, except at the tips, which are green (first-class certificate).

Phyllocactus Epirus (J. Veitch & Sons).—A rich scarlet variety of great size, and with a glow of purple in the central portion of the flower (award of merit).

Phyllocactus Agatha (J. Veitch & Sons).—Pale salmon is the shade of this splendid variety. The flower is very large (award of merit).

Rose Aurora (W. Paul & Son).—A Hybrid Tea of the first quality. The flower is large and very full, and the colour rich salmon. It is a free bloomer (award of merit).

FRUIT AND VEGETABLES.

With the exception of the remarkable exhibits of fruit of Leopold de Rothschild, Esq., and Messrs. T. Rivers & Son, which are arranged in the chief marquee, the collections to be referred to are displayed in one of the long tents over the terrace walk, next the Thames Embankment. While there are remarkable exhibits of both fruits and vegetables, also groups, in which both are combined, we doubt if, in the aggregate, the display is larger than in previous years.

FRUIT.

In this section the three primary exhibits are those from Gunnersbury House, Sawbridgeworth, and Maidstone. The exhibit of Leopold de Rothschild, Esq., is a remarkable one. Mr. Hudson seems to have represented a viney in bearing and a miniature orchard house under canvas. Vines bearing excellent crops of Grapes are trained under the roof of the marquee, and beneath them are groups of heavily laden Cherry, Plum, Peach, Nectarine, and Fig trees to the number of about forty. In front of these are fourteen boxes of gathered fruit. Early Rivers Nectarines are of remarkable size, six fruits weighing 3 lbs. 3 ozs. Auguste Nicaise Strawberries are enormous, and the white fruits of Louis Gautier conspicuous. Cherries in six varieties are very fine. The entire exhibit is such as has not been previously arranged by a private gardener.

The exhibit of Messrs. T. Rivers & Son consists of about forty trees of the splendid Early Rivers Nectarine, some of the older of these being laden with brilliant fruit, while trees only one year in pots are each bearing one or two splendid Nectarines, testifying to the early productiveness of the variety, combined with the most satisfactory growth. The smaller and earlier Nectarine, Cardinal, could not be represented, as the crops were cleared a fortnight ago. Included in the collection under notice are *Crimson Galande*, *Early York*, and *Hale's Early Peaches*; also trees of the *Stint Plum*, which is rising in public favour, and the better known *Rivers' Early Prolific*. The trees are in the best of condition, and will uphold the cultural fame of Sawbridgeworth.

A very striking collection of seventy dishes of Apples and Pears, by Messrs. George Bunyard & Co., attracts much attention. The table is made the more interesting by small heavily bearing Pear and Fig trees in pots. Among the Apples so fine and firm are *Calville Rouge*, *Bismarck*, *Lane's Prince Albert*, *Newton Wonder*, *Tibbit's Pearmain*, *Lord Derby*, *Annie Elizabeth*, and *Ontario*, a large, roundish, angular variety, which received an award of merit for its tenderness and good quality. Mr. George Bunyard, the active head of the Maidstone Nurseries, not only knows how to grow fruit, but to "keep" Apples and show them in a manner not yet equalled at this season of the year.

A highly meritorious collection of under glass fruit mainly is displayed by Mr. J. McIndoe from Hutton Hall. It includes excellent Grapes Melons, Oranges, Black Tartarian Cherries (splendid), Peaches, Nectarines, Figs, Pears, Apples, and Strawberries, supplemented by Tomatoes and Vegetable Marrows, all in superb condition.

Mr. G. Featherby exhibits, from the Vineries, Gillingham, Kent, excellent Black Hamburg Grapes, *Hale's Early Peaches*, *Dryden Nectarines*, as well as Tomatoes, Cucumbers, and a market basket of French Beans. Mr. J. Ryder, The Gardens, Hawkhurst, St. Albans, exhibits good and remarkably well coloured *Grosse Mignonne Peaches*.

Large Melons are contributed by Mr. E. Beckett, Aldenham, and smaller by Mr. T. Richardson, Hollingbourne, and Royal Sovereign Strawberries by Mr. J. Miller, Ruxley Lodge, Esher.

VEGETABLES.

Exhibits are not numerous, but some of them are very large, important, and interesting. A ponderous collection is effectively arranged by Mr. E. Beckett, gardener to Lord Aldenham. It comprises some eighty dishes, including enormous Leeks, large piles of Cabbage

and Broccoli, excellent Potatoes, Tomatoes, French Beans, Vegetable Marrows, Globe Artichokes, Asparagus, Peas, young Turnips, and Carrots, Mushrooms, and all kinds of salads. Everything displays superior culture, and the group is highly meritorious.

Still larger and very different is a marvellous display provided by Mr. W. Empson, gardener to Mrs. Wingfield, Ampthill. Some visitors indeed considered it too large, as involving an extensive duplication of varieties. Be that as it may, it covers some 24 yards in length of tabling, and is like bringing a kitchen garden into the tent, with its rows of Peas, Kidney Beans, and Tomatoes in full bearing, and in front of them piles of practically all kinds of vegetables which the garden affords at this season of the year—all bearing the stamp of good culture.

Mr. W. Hayes, gardener to the Marquis of Northampton, Castle Ashby, stages some forty dishes of well-grown produce, similar in kinds and character to those already enumerated, the Asparagus being the finest we observed in the exhibition. Very fine Asparagus is exhibited by Mr. Frank Chapman, 57, Crouch Street, Colchester, but excelled, except in one huge bunch, by the Castle Ashby produce, with its greater length of succulent green stems.

Boxes and clusters of large Mushrooms are staged by Messrs. Mount Bros., Willow Farm, Canterbury; also enormous clusters of almost milkwhite buttons and broilers, with spawn bricks, by Mr. E. Addy, Ealing Road, Brentford.

Mr. S. Mortimer, Rowledge, exhibits nine boxes of Tomatoes, also eight boxes of Cucumbers, some in a green, others in a ripe or seeding state. Very handsome are the fruits of Sutton's A1. The smaller new variety, Sensation, attracts attention, as does a new dark, prominently spined form, called "The Keeper," with stems showing its great productiveness.

Messrs. Jas. Carter & Co., at one end of their great festooned exhibit of plants and flowers, have a fine pile of Model Cucumbers, as well as Peas, Climbing French Beans, and Tomatoes, including heavily borne plants of Duke of York.

The greatest advance in vegetables, however, is represented in the remarkable exhibit of new early Marrowfat Peas, by Messrs. Sutton and Sons. The varieties are not shown in dishes, but flat baskets, of half a bushel each or more of splendid large pods. The varieties include Sutton's Seedling, Early Giant (handsome pods), A1, Bountiful, and Empress of India. Alternately with the baskets of Peas are fine fruits of choice Cucumbers—Sutton's A1, Matchless, Peerless, and Pride of the Market, as well as smaller fruits of the continuous bearing "Everyday." Relief is afforded to the substantial exhibits by elegant Palms, small Ferns, and a margin of Selaginellas—an altogether excellent display.

Mr. Graham Powell, Horticultural College, Swanley, has a bold, effective, and creditable exhibit of Cucumbers in pots, trained umbrella fashion, the pots being hidden by Peas in pots bearing profusely. Between the elevations different kinds of vegetables are represented, the whole making an attractive display.

Mr. W. L. Bastin, gardener to Alex. Henderson, Esq., Buscot Park, has an attractive mixed exhibit of Palms, Potatoes, Melons, Tomatoes, Cucumbers, and French Beans—bright and attractive.

A novelty in the vegetable line is provided in the form of small, well blanched, crisp looking heads of "White Forcing Celery." They are necessarily small, and have presumably been grown in frames; but all the same, tempting by their young green leafage. Exhibited by Mr. John Nicholls, Tooting.

MEDALS AND CUPS AWARDED.

GOLD MEDALS.—Sir Trevor Lawrence, Bart., for Orchids; Messrs. W. Paul & Son and G. Mount for Roses; J. Veitch & Sons for Caladiums, Crotons, &c.; and Leopold de Rothschild, Esq., for pot fruit trees.

SILVER CUPS.—Messrs. Jackman & Son and R. Smith & Co. for Clematis; Messrs. Barr & Son for herbaceous plants; Cutbush & Son for foliage plants, &c.; Sir Frederick Wigan, Charlesworth & Co., Hugh Low & Co., F. Sander & Co., H. S. Leon, Earl Percy, L. Linden, and J. Cypher for Orchids; Mr. J. R. Box for Begonias; Mr. C. Turner for Roses and Pelargoniums; Lord Aldenham and Sutton & Sons for vegetables; Sir J. Pease for fruit; and Messrs. T. Rivers & Son for pot fruit trees; Carter & Co. for vegetables; and Cannell & Son for Begonias, &c.

SILVER-GILT KNIGHTIAN MEDALS.—Messrs. Bunyard & Co. for Apples; Mrs. Wingfield for vegetables; and Mr. Mortimer for Tomatoes and Cucumbers.

SILVER-GILT FLORA MEDALS.—Mr. T. S. Ware for herbaceous plants; Messrs. Perkins & Son for floral decoration; Mr. H. B. May for Ferns; Messrs. B. S. Williams & Son for Orchids and decorations; Messrs. Lewis & Co. for Orchids; W. Thompson, Esq., for Orchids; Mr. Jules Hye for Orchids; Leopold De Rothschild, Esq., for Carnations; Messrs. W. Balchin & Son for hardwooded plants; Messrs. James & Son for Calceolarias; Messrs. Fisher, Son, & Sibray for foliage plants; Messrs. Kelway & Son for Pæonies, &c.; Messrs. J. Laing and Sons for Gloxinias, &c.; Messrs. J. Peed & Son for Caladiums; and Mr. J. Waterer for Rhododendrons.

SILVER-GILT BANKSIAN MEDALS.—L. Mond, Esq., for Orchids; Mr. H. J. Jones for Begonias; Messrs. F. Cant & Co. and Mr. W. Rumsey for Roses; Messrs. Backhouse & Co. for hardy plants; Mr. G. Edom for Tulips; Mr. J. Pritchard for Cacti; Mr. M. V. Seale for decoration; Messrs. J. Hill & Son and Messrs. W. & J. Birkenhead for Ferns; M. S. Cooke, Esq., for Orchids; and Mr. L. De Smet Davivier for Anthuriums.

SILVER KNIGHTIAN MEDALS.—The Marquis of Northampton and the Swanley College for vegetables; and Mr. G. Featherby for fruit.

SILVER FLORA MEDALS.—Messrs. J. House & Son for Violas; Messrs. A. Young & Co. for Gloxinias; Mr. A. Perry for herbaceous plants; Mr. M. Stevens for bouquets, &c.; Mr. W. Sydenham for Violas; Mr. L. Calcutt, Mr. J. Prewett, and Messrs. Jones & Sons for floral decorations; Mr. J. Russell for Azaleas; Mr. M. Prichard for herbaceous plants; Messrs. F. Miller & Co. for Mignonette, &c.; Mr. F. Chapman for Asparagus; Mr. W. Godfrey for Asparagus; Lord Foley for



FIG. 83.—RAMBLER ROSE PSYCHE. (See page 444.)

Strawberries; Mr. A. Henderson for fruit and vegetables; Mr. W. Lawrence for Asparagus; Messrs. R. & G. Cuthbert for Azaleas; Messrs. Fromow & Son for Maples; Mr. W. Iceton for foliage plants; Jadoo, Ltd., for plants; Messrs. Cripps & Co. for Maples; and Messrs. J. Cheal and Son for hardy plants.

SILVER BANKSIAN MEDALS.—Mr. M. Koster for Azaleas; Mr. Tulett for Zonal Pelargoniums; and Mr. E. G. Reid for Rhododendrons.

An exhibition of this character, it almost goes without saying, could not be prepared for and conducted in the absence of a large amount of forethought and of devoted work, and therefore recognition is due for services rendered by the Secretary (Mr. Wilks), Superintendent (Mr. Wright), and all who have striven so willingly and well to make it as successful as the shows of previous years.



WEATHER IN LONDON.—The weather in the Metropolis during the past seven days has been very changeable. On Thursday and Friday it was wet almost the whole of the day, but on Saturday it was brilliantly fine and very warm. Sunday was wet in the morning, but clear later, while on Monday afternoon a little thunder was heard, and the air was close, as was it throughout Tuesday. On Wednesday, at the time of going to press, it was dull yet dry.

— **WEATHER IN THE NORTH.**—The weather has again been very variable during the past week. On the morning of the 18th there were between 2° and 3° of frost, and there was a recurrence of frost on the following morning. Several days were bright; but generally a cold easterly wind has prevailed, and rain has frequently fallen.—B. D., *S. Perthshire*.

— **GARDENING APPOINTMENT.**—Mr. W. Pilgrim, foreman at Hackwood Park, Basingstoke, has been appointed gardener to Sir George Meyrick, Bart., Bodorgan, Anglesey, N. Wales.

— **VAGARIES OF PRIMROSES.**—I am greatly obliged to "St. Albans" for his kindly note (page 430). The writer, however, has never met me at Shipley, as he suggests, as I never was there. Possibly there may be another "A. D." in the world who is a little less notorious. Why does "St. Albans" vary his botanical nomenclature of the common Primrose by calling it in one place *Primula acaulis* and in the other *P. vulgaris*? The term *acaulis* is one of doubtful correctness, but is sometimes applied to the double-flowered section. The Cowslip is *P. veris*, and a red form is *P. veris rubra*, whilst the true Oxlip is usually called *P. elatior*. Still it is just possible that the Oxlip is but a large coloured form of the Cowslip. There can be no doubt but that the variation in the colour of the flowers of the wild Primroses "St. Albans" mentions was due to the presence in the soil of iron, or some similar chemical or mineral ingredient. But soils of that description are rare, and their influence on Primulaceæ more rare. That it is not permanent is evidenced by "St. Albans" when he tells us that whilst seedlings of these plants growing in the same soil gave coloured flowers, those that were planted or naturally grew on the grass plot, not having similar soil, but one doubtless devoid of iron, reverted to their pristine hue of sulphur. Doubtless the cause of variation in colour found in this case applies in every similar case. I have seen tens of thousands of wild Primroses transferred to ordinary soils, such as that of the Thames Valley for instance, and have never seen any colour variation on the flowers in after years. That is, I think, general experience.—A. D.

— **WHAT WILL THE SUMMER BE?**—Writing under the depressing influence of a pouring wet day, perhaps I am for that reason unduly pessimistic in assuming that we shall, or may, have a wet, cold summer. I do not assume that because we are having a wet and rather cold May, but I fear it because a wet summer is practically due. No one can wish such a result, because did it come it would be in many ways a national calamity. Of course we have had wet, cold summers, before. Those who are specially observant, and note carefully the nature of each season, could tell us, no doubt, very accurately how many wet summers we have had during the past twenty years, and even the average of wet ones for the now fast-passing nineteenth century. Mr. Edward Mawley could, no doubt, give on that point much useful information, and perhaps he could also give his opinion as to the probable nature of the weather for the coming summer. In entering into any speculations as to probabilities, we must not forget that a considerable rainfall was due to us ere the month of May began. During this month a good deal has been done to equalise matters, although the balance is probably yet on the dry side. But Nature is commonly very erratic, and often so far from being content to indulge in comparative balancing, rushes into extremes, and either burns us up with long-continued drought, or floods us with excessive rains. Our ideal weather and season is found when balances are evenly adjusted. But if the rain should presently cease and fine weather follow, then should we be entitled to look for a year of marvellous production. So far, what the weather will be a week, a month, or a year hence is enshrouded under a veil we cannot lift.—AN OLD GARDENER.

— **CALCEOLARIAS AT READING.**—A correspondent informs us that there is a more than usually fine display of these gorgeous early summer flowers in the establishment of Messrs. Sutton & Sons on the outskirts of the town. As the result of continuous striving for higher excellence, the home exhibition is said to be better than ever, and worth a long journey to see.

ROSE PSYCHE.—This is a new Polyantha Rose that was raised by Mr. G. Paul, jun., of the firm of Messrs. Paul & Son, Cheshunt, from a cross between *Crimson Rambler* and *Bennett's Golden Fairy*. It was shown at the Drill Hall on April 26th, when the Floral Committee of the Royal Horticultural Society gave it an award of merit. As may be seen in the illustration (fig. 83, page 443), it partakes largely of the character of the *Crimson Rambler*, but is not perhaps quite so strong in growth. This, however, may be changed in the course of a few seasons. If such prove to be the case we are of the opinion that a modicum of the extraordinary popularity which has been accorded to *Crimson Rambler* will be passed on to its progeny. *Psyche* is very floriferous, and the individual flowers are of good size and substance, the colour being pale rose pink.

— **ROYAL METEOROLOGICAL SOCIETY.**—The monthly meeting of this Society was held on Wednesday afternoon, the 18th inst., at the rooms of the Royal Astronomical Society, Burlington House. Mr. F. C. Bayard, L.L.M., President, in the chair. Mr. R. H. Scott, F.R.S., read a paper on the frequency of rainy days in the British Islands. He had taken the number of rainy days in each month at forty stations for the twenty years, 1876-95, and then divided that number by the total number of days in the month, and so ascertained the resulting percentage. The greatest excess of frequency is always on the extreme north and west coasts. June is the month with the least number of rainy days, but in July the summer maximum of rain occurs, bringing the well-known Lammas floods. In October the weather becomes decidedly showery, and the distribution begins to assume its winter type. November is the month with the greatest frequency of rainy days. Mr. F. J. Brodie read a paper on the abnormal weather of January last, which was one of the most remarkable winter months on record. The month was singularly dry, with an absence of snow or sleet—a somewhat unusual feature in January, even for any individual station, but far more remarkable as applying to the country as a whole. The special feature, however, was the striking absence of severe frosts, the frequent prevalence of unusually mild weather, and, as a result, the abnormal warmth of the month, especially in the more northern parts of the kingdom. The mean temperature was generally, over the whole country, about 5° above the average, while at many places situated in the more northern parts of the kingdom it was more than 6° above the average.

— **THE R.H.S. AUTUMN FRUIT SHOW.**—We have received the schedule of the Exhibition, which will open at the Crystal Palace on September 20th and close on October 1st. In addition to the usual classes for gardeners and nurserymen, with substantial money prizes for the former, cups and medals for the latter, two new sections are provided—one of substantial importance, the other an interesting experiment. The first of these sections is for market gardeners only, forty prizes being offered in twenty classes for the packing of different kinds of fruit for market that are in use at the time of the show. The prizes range from £2 to 10s, and an instructive display should be forthcoming. The next new section is entitled "Special district county prizes" in two classes—(A) Apples, six dishes, distinct, four cooking and two dessert; (B) Dessert Pears, six dishes, distinct. The prizes offered are—first, £1; second, 15s., in ten classes, the first open only to Kent growers. Seven others to groups of counties (specified), as, for example, "Open only to growers in Surrey, Sussex, Hants, Dorset, Somerset, Devon, and Cornwall;" and so on throughout England and Wales, with a class each for growers in Scotland and growers in Ireland. A similar plan was projected and carried out in connection with the Great Show in the London Guildhall in 1890. The R.H.S., however, goes a step in advance in offering to add third-class single fares to prizewinners from their nearest railway station to London. It must not, after this, be said there is no enterprise in the premier Society, or that it does not offer inducements to provincial growers to compete at its shows. These classes are open to "gardeners and amateurs only," and growers of good fruit in the different counties may now turn their attention to what will undoubtedly be by far the greatest fruit show of the year. We have heard, but hope the rumour is not true, that these shows are not likely to be continued if there is not an increase in the subscriptions. The published list is certainly far short of the sum expected—£100, the number of subscribers being less than fifty; but more, it is hoped, may follow, and save what is really a great national fruit show from extinction.



SPATHOGLOTTIS AUREO-VEILLARDII.

THIS charming hybrid, of which the varietal name tells the parentage, was exhibited at the Drill Hall by Messrs. J. Veitch and Sons, Ltd., Chelsea, on the 10th inst., and elicited a considerable amount of admiration. The flower is of the most refined type of beauty, and well merited the first-class certificate which the Orchid Committee awarded to it. The ground colour of the sepals and petals is deep creamy yellow, while over the whole of the latter organs, which are considerably broader than the sepals, there are immense numbers of rose-coloured pin-head spots that add materially to the flowers' charm. At the apex of the sepals the spots again occur, but are here so minute as to almost appear like a flush of colour. On page 439 we give a woodcut (fig. 82) of this *Spathoglottis*, which is one of the latest examples of Mr. Seden's skill as a hybridist of Orchids.

LÆLIA LATONA.

Though one of the older raised hybrids this is certainly one of the most beautiful, and as it is easily grown, and has been freely propagated, there is every prospect of it becoming in future a popular garden Orchid. The celebrated Chelsea firm has given us many fine things in the way of hybrid Orchids, but few finer than this. It is the progeny of *L. cinnabarina* and *L. purpurata*, the former being the seed-bearing parent, and the one that shows most strongly in the hybrid. Its influence is plainly seen in the flowers, and especially, also, in the base of the pseudo-bulb, these being rounded and swollen like those of *L. cinnabarina*. Several flowers are produced upon a spike, and they are individually about 5 inches across; the sepals and petals are a light tawny orange, the lip narrow, of a distinct and pretty shade of reddish purple margined with orange, and finely undulating. It was first exhibited in 1892 before the Orchid Committee of the Royal Horticultural Society, and at the last meeting at the Drill Hall Messrs. Veitch had several fine well-flowered plants in their group.—H. R. R.

ORCHIDS ROUND LONDON.

FOR the past few years I have made it a practice to visit the several collections of Orchids in and around London. True, it has not been found possible to make an inspection of the whole of them, but the best use was made of the time at disposal. This season it is proposed to go over some of the ground again, and to record the features of the several establishments, both private and professional, that will be visited. The Orchids will not be examined from the point of view of a botanist, and no technical descriptions will be given—indeed, the endeavour will be made to regard them from a popular aspect; so far as can be done, while preserving correctness of nomenclature and doing justice to the plants seen. Probably no better period of the year than this could be chosen, for on every hand plants are flowering, and the species, hybrids and varieties of all kinds are well nigh endless.

There can be no doubt that within a radius of about thirty miles of London are grown some of the finest Orchids in the country, and it is equally beyond question that the most valuable individual collection is within that area. Look to the north, south, east and west of the metropolis, and actually within the four-mile radius of Charing Cross, and Orchid growers of world-wide repute will be found. Some are growers for trade purposes, others collect the plants purely as a hobby, and a most fascinating hobby it is, while a few combine these two objects. Happily, too, the number of growers is increasing, and some who only a few years ago commenced their culture, are now, by liberal yet judicious purchasing, standing in the front rank. No one, I think, would care to give even an approximate opinion as to the value of the Orchids grown by these several enthusiasts, but it must amount to many scores of thousands of pounds.

It must not be thought that because the provincial collections are not included in these notes they are not considered worthy of attention. Such is not the case, for many of them are extensive and rich in quality, but the facilities for their examination are greater for those residing in the various neighbourhoods than they are to a Londoner. The task, therefore, is deputed to the many others who are doubtless perfectly familiar with the best collections in the country.

Returning to our own immediate province, the difficulty of knowing where to start presents itself. They cannot be taken alphabetically, while it is equally impracticable to centralise them into

districts, as it were. Let us start this week in London, and end—well, where and when we can. Having decided upon a metropolitan collection for the opening notes, the journey will be a short one, for it will lead us to Chelsea.

THE ROYAL EXOTIC NURSERY.

Just when Messrs. J. Veitch & Sons commenced the culture of Orchids, and with how many plants they started, I am not prepared to say, but that they have now, at Chelsea and at Langley, a splendidly representative collection, no one will deny. One may go at any time to the great nursery in King's Road and some Orchids will be found in flower, though at one period there may be only a few, while at another time there will be many. Two weeks before the great show that is now being held in the Temple Gardens was opened, this visit was paid, and in every house were numerous flowers, many of extraordinary merit. Hundreds of plants were at the zenith of their beauty, while hundreds of others had yet to produce their spikes and expand their blooms. There were cool, intermediate, and warm house kinds, and a few of them will be noted in the succeeding paragraphs.

In many establishments it is the practice to concentrate as much as is possible all the Orchids in flower in one or two structures, but such is not the case at Chelsea. If the visitor be desirous of seeing all the flowers he must pass from one structure to another, until every house that is devoted to Orchids has been seen. In some houses flowers will be comparatively scarce, perhaps, but in the majority a diversified display will be found. Of the general good health of the plants it is unnecessary to enlarge at length, as all are in such good condition—indeed, considering the surrounding atmosphere, they are remarkably creditable both to the firm and to Mr. Harris, the grower. Of course numbers are brought from Langley when they are in flower, but by far the larger proportion find a home at Chelsea from the time of importation until they pass into other collections.

As was anticipated, the first house that is entered from the long walk, and which is devoted mainly to *Odontoglossums*, was very charming, for there were many varieties of crispum to see. There was a marked absence of really inferior forms, though it is superfluous to say that some were far better than others. Many other species were observed, but to name them would occupy more space than is available in the Temple Show issue. Leaving this structure we enter one slightly warmer, where *Cypripediums* in variety are always in bloom and ever interesting. Hanging from the roof was the fragrant and chaste *Burlingtonia pubescens*, while contiguous to it *Cœlogyne tomentosa*, with its rosy buff flowers, and on a plant of *C. Dayana* fifteen long pendulous spikes were observed. They were a pleasing change from the brighter flowers of *Oncidium ampliatum majus*, *sarcodes*, and others that were flowering so profusely.

The Orchid fernery in this nursery is always cool, pleasant, and refreshing, for from the soft green of Ferns and the brown of the stones the Orchids rise in graceful beauty. Plants of *Oncidium Marshallianum*, with splendid spikes of bright flowers, and several varieties of *Cymbidium* produced a charming display that was much enhanced by superb specimens of *Thunia alba Dodsoni*, with its refined flowers, and *Epidendrum Wallisi* in unique condition. *Dendrobiums*, *Bifrenarias*, *Odontoglossums*, *Lycastes*, and others all lent charm and diversity to this section of the Orchid department; but we must not linger, for the entrance to the great *Cattleya* house is reached, and we must glance within.

Cattleyas, *Lælias*, *Vandas*, and a few others occupy the whole of the space available in the immense structure known to all orchidists as the *Cattleya* house. It is a grand house, and none but plants of the best merit should find a home therein. They need not all be in flower, but they ought to exhibit the best characteristics of health in plump pseudo-bulbs and deep green, tough foliage. Such as a matter of fact are the prevailing features of the plants now to be seen, but added to these points there are scores in full flower. Hundreds of flower sheaths of various *Cattleyas* are showing, the forms of *Mossiae* especially being, owing to the absence of sun, rather later than is customary. A day or two of bright sunshine, however, will alter their appearance, and flowers will be opening on every side as well with these as with *Lælias* in variety.

Of those now expanded several forms of *Schröderæ* are very beautiful, as are the many plants of the handsome *C. Lawrenceana*. Of *C. Wellsiana* there are three forms—namely, the type, *C. W. albida*, and *C. W. langleyensis*, of which the latter is superb, and received an award of merit at a recent meeting of the Royal Horticultural Society. Specimens of *C. Mendeli* are numerous and of merit, as are those of *Lælia purpurata*. *Lælia elegans* is a lovely flower, and is here seen to perfection, and the same may well be said of *L. Latona* and *L. Hippolyta*. These are only a few of the many that are to be seen in bloom, but they must suffice for the time being. Ere turning, however, to other

places, we would congratulate Mr. Harris on the condition of the plants and on the cleanliness that prevails throughout the Orchid department.

SUNNINGDALE PARK.

Let us now go further afield. This journey to Sunningdale Park recalls vividly to mind the last occasion on which we had the pleasure of meeting Mr. F. J. Thorne at home. I remember well that it was on a hot July day, two years back, when a start was made from London to Englefield Green, to see Baron Schröder's Orchids, whence a walk of four miles or so across Windsor Park brought us to Sunningdale. This time the route was altered, and the latter was placed first, with the object of driving to The Dell. The plan was carried out successfully, and instead of being broiled in the sun it was a case of being drenched in the rain. The fortune of war, it may be said—well, it was accepted with resignation, and both collections of Orchids were seen, with one or two other things almost, if not quite, as interesting.

The invitation from Mr. Thorne to "come to breakfast" was accepted literally, and we (for I had a companion) arrived at the gardens about 9.30. Entering beneath Mrs. Thorne's arch of Roses and Clematis montana, the latter in full bloom, and having accepted hospitality, we turned with continued pleasure to other matters. Major Joicey's Orchids are remarkable for quality far more than they are for quantity—indeed, so far as mere numbers are concerned it is surpassed by many, but in the excellence of the culture none is before it. House space is all too limited for the grand plants that are grown, but the deep and practical interest taken in their culture by Mrs. Joicey and Mr. Joicey, jun., as well as the Major, augurs well for future extensions. There can be no question, judging from the condition of the stock now held, that the grower will rise with any developments that may come.

At the present moment the plants of *Odontoglossum* (*Miltonia*) *vexillarium*, of which there are nearly 100, are making the brightest display. Small plants and large are producing spikes of from seven to fifteen handsome, shapely flowers of varying shades. The leaves are quite as good as the flowers, for they glow with the rich hue of health. Two sides of a span-roofed house are devoted to them, and no plants could occupy the space with greater credit to both owner and grower. These are a specialty of Mr. Thorne's, which other *Odontoglossums*, such as forms of *crispum*, are not. Yet the latter are admirably cultivated and produce hard foliage and flowers of good form and substance. *O. hastilabium* was observed in splendid condition, as was *Houlletia tigrina* in the same house.

Foremost in this collection, from a purely cultural point of view, ought to be placed *Diacrium* (*Epidendrum*) *bicornutum*, to which reference was made by a correspondent in the *Journal* on April 21st last. Several of the plants there adverted to are still in flower. Then, too, *Anguloas* are grand, particularly conspicuous being a plant of *Ruckeri sanguinea*, producing several twin-flowered scapes. In addition to the few which it is here possible to enumerate, there are some capital *Cattleyas*, *Lælias*, *Oncidiums*, *Sobralias*, *Dendrobiums*, *Coelogynes*, *Masdevallias*, with several rarer Orchids of chiefly botanical interest, and an excellent stock of *Cypripediums*, comprising species and varieties of more than average merit. As an example of this, it is only necessary to name Major Joicey's variety of *Exul*, which received from the Royal Horticultural Society a first-class certificate, and was figured in the *Journal of Horticulture* for April 9th, 1896.

Like most other orchidists, the Sunningdale grower has become bitten with the fever for hybridisation, and scores of his "babies" are to be seen on every hand. The labels tell of interesting crosses that have from time to time been made, and it can only be hoped that the strenuous efforts that have been made will be rewarded with success. The secrets of the splendid results that have been attained to by Mr. Thorne he considers as studying the natural habitats of the plants, and copying them as closely as possible, with perfect cleanliness of plants, pots, and structures. These points are so simple that everyone ought to be able to copy them, and doubtless they would be rewarded for their efforts.

THE DELL.

As has been said, the drive to The Dell was made in pouring rain, but we were more than rewarded by the sight of the Orchids and the welcome accorded by both Mr. H. Ballantyne and his skilful grower Mr. Clarke. Where such a collection of Orchids as that which is here seen can be found it would be difficult to say, and in some respects it cannot be disputed that Baron Schröder's stock is unrivalled. Probably no individual gentleman has been so assiduous as the Baron in collating all that is rare and good in the Orchid world, and his success is nothing short of remarkable. But his generous monetary outlay would have availed him little had he not had skilful practical support. This was forthcoming in every respect from Mr. Ballantine and Mr. Clarke, the latter of whom acted as guide through the houses.

Not one or two, but many of The Dell Orchids are unique, and their value cannot be estimated. This is more especially the case in the *Odontoglossum crispum* section. One has but to think of the half dozen varieties named *Baroness Schröder*, *apitum*, *Stevensi*, *Starlight*, *nobilis*, and *Ballantinei* to realise the rarity of the collection, though neither these nor a score of others that could readily be enumerated can convey any idea of the grand results that are secured by good culture. Splendid spikes carrying upwards of a dozen flowers are abundant, while others with over a score of flowers are not uncommon. Another extraordinary point is the extent to which varieties improve at The Dell. For example, *O. c. Starlight* procured a year ago is far superior in all respects to the flowers shown by Mr. R. Brooman White of Ardarroch.

Dendrobiums are now making a very beautiful display, especially such as *Farmeri*, *thyrsiflorum* in variety, and others. The plants are very healthy and the flowers peculiarly rich in colour. *Vanda teres*, though not yet in full bloom, is very promising, and the few in flower are of excellent quality. *Odontoglossum* species and hybrids, with *Miltonia vexillaria*, are seen on every hand, as are *Oncidiums*, some of which are in flower and some in bud. The spikes on these are of immense length and substance. In various houses is a superb assortment of *Cypripediums*, including *callosum* *Sanderæ*, *Hyeatum*, *Stonei* and *Stonei platytænium*, the white *bellatulum*, and grand forms of several of the better known kinds. *Sobralias*, *Aërides*, *Saccolabiums*, *Cochlioda Noezliana*, *Maxillarias*, *Masdevallias*, *Anguloas*, *Calanthes*, and *Coelogynes* are met with in force as the houses are traversed, and almost without exception their condition is good.

Another feature is the stock of *Cattleyas*, *Lælias*, and *Lælio-Cattleyas*, which is nothing short of wonderful in its extent and variety. Many of the *Cattleyas* here, as elsewhere this season, are somewhat later, but the splendid plants will be resplendent in the course of a very few days. Of those in flower, *C. intermedia alba*, *C. Skinneri alba*, forms of *Mendeli*, and others are very beautiful, and of themselves are well worth seeing. Add to these the *Lælias purpurata* and *Latona*, with *Lælio-Cattleya Digbyana Mossiæ*, and a conception may be formed of the present condition of affairs. There are many hundreds of plants of all sizes, from the tiniest seedling to the specimen 2 or 3 feet through, and all appear to revel in the treatment that is meted out to them by the grower.

The structures at The Dell devoted to Orchids, as well as those occupied by fruit trees and flowering and foliage plants, are all capitally built for the purpose, and the arrangement of them is in all respects admirable. They vary in height and shape, some being lofty, and others very low, according to the requirements of the plants within them. Not only are the woodwork and glass kept scrupulously clean, but the floors, stages, and pots also receive proper attention, while, it is needless to say, the plants themselves are never neglected. But no more must now be said, for both time and space are exhausted. In a future issue reference will be made to other collections of Orchids which are so well represented at this moment in the Temple Show.—H. J. WRIGHT.

A "RECORD" CLUSTER OF BANANAS.

THE enclosed photograph shows a remarkable bunch of Bananas (*Musa Cavendishi*) grown by Mr. F. Jordan, head gardener to John Corbett, Esq., Impney, Droitwich. The bunch measured 3 feet 9 inches from the top "fingers" or pods to the bottom one, and it weighed 114 lbs. when cut. It contained 283 "fingers," all of very good size and uniformly disposed from top to bottom. The sucker was planted on January 15th, 1897, and showed fruit on the 27th last September, consequently the fruit has been developed during the dark and cold days of winter chiefly. Mr. Corbett was so pleased with the bunch that he had it photographed. It was weighed in the presence of several men, and the figures given are correct. The stem of the plant girthed 36 inches.

Impney Gardens are in the highest condition under the fostering care of Mr. Jordan, and the owner encourages him by ungrudging liberality. The collection of plants has been materially enlarged (including a small but choice selection of Orchids), and a large span-roofed house, 100 feet by 12 feet, is being erected for their accommodation.

Mr. Corbett continues his benefactions to the town of Droitwich by the building of a new hotel (the Park Hotel), replete with every convenience and thoroughly homely. It is surrounded by about 6 acres of ornamental and dressed grounds, with a charming lake, and has a direct outlook upon the beautiful park, which was laid out by Mr. Davis. Mr. Jordan has been engaged in laying out the grounds surrounding the new hotel, and has to generally supervise the park in addition to his

charge at Impney, which shows that his situation is not exactly a sinecure. Mr. Corbett has proved his entire satisfaction with his gardener in the most tangible manner possible; long may that satisfaction continue.—J. UDALE.

¶ We are very much obliged to Mr. Udale for sending the splendid

exceeded by 7 lbs. by a bunch grown by Mr. D. McKenzie at Sherwood Park. Mr. Corbett and his gardener are to be congratulated on the noble specimen now illustrated, and which we are sorry to learn could not be kept for the Temple Show. Some of the fingers which we measured and weighed were 9 inches long by 6 inches in circumference:

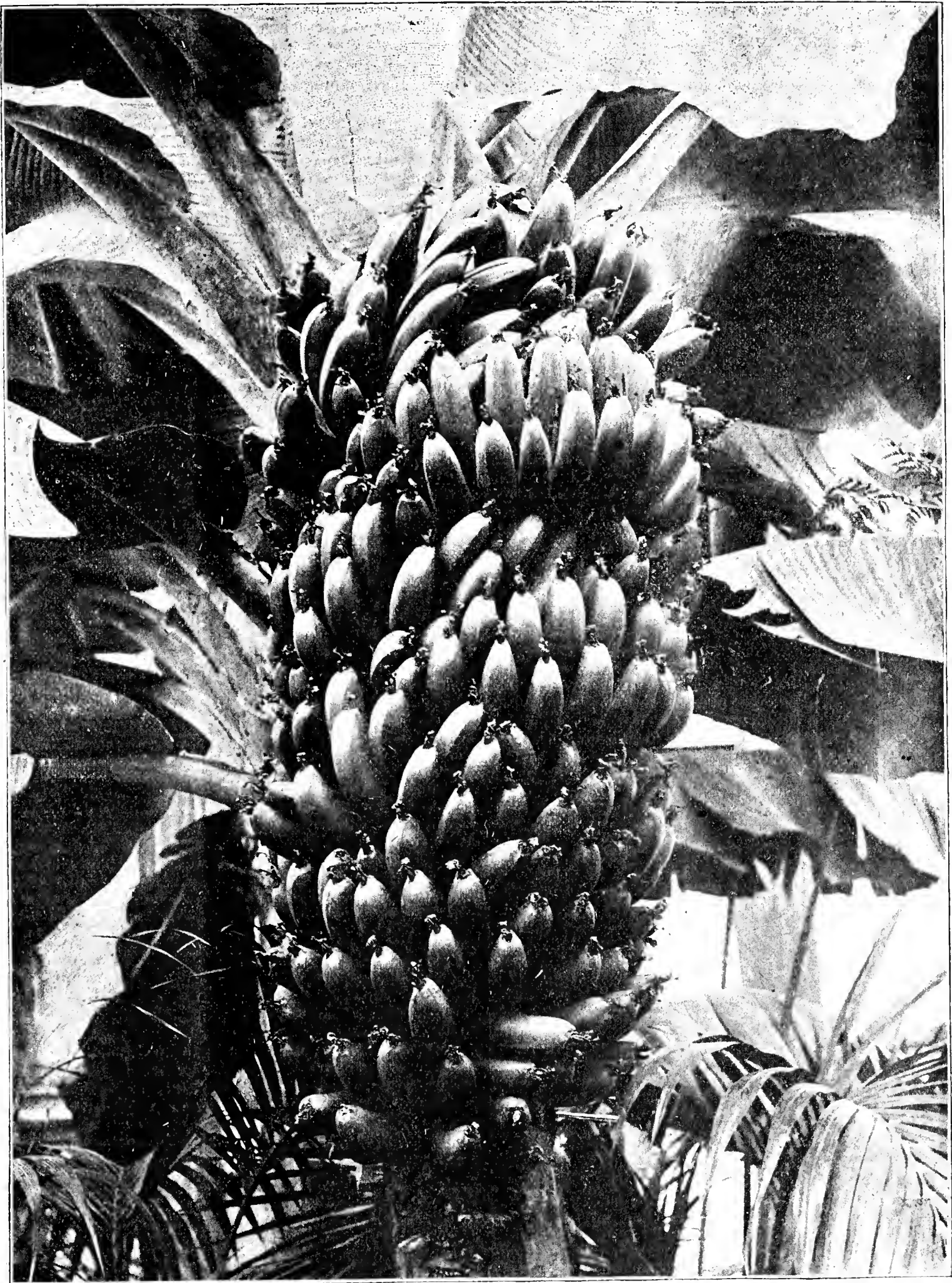


FIG. 84.—MUSA CAVENDISHI AT IMPNEY—WEIGHT 114 LBS.

photo of, so far as we know, the heaviest bunch of *Musa Cavendishi* on record. The heaviest cluster we have seen was grown by Mr. J. Ollerhead, gardener to Sir Henry W. Peek, Bart., at Wimbledon House, in 1877, and exhibited at a meeting of the Royal Horticultural Society. Its weight was 98 lbs., and its merit was recognised by the award of a gold medal; but, according to the "Gardeners' Chronicle," this weight was

they turned the scale at $6\frac{1}{2}$ ozs., and a "twin" weighed 12 ozs. As may be seen in the illustration, they were wonderfully uniform in size, and we can testify were of distinctly superior quality. We have heard of heavier clusters of *Musa sapientum*, but have no precise records, and shall be glad if they can be furnished. Mr. Corbett's handsome bunch is the heaviest of *M. Cavendishi* that has been brought to our notice.]



CHRYSANTHEMUMS IN MAY.

Is it not a very extraordinary thing that the Chrysanthemum Mutual Friend should be in flower now, and quite a rarity? I should be glad to know if any of your readers have experience of a midseason variety flowering at this time of year. The old plant was cut down in late autumn after flowering, and threw up two stems, which each now bears a bloom equal to any midseason flower.—CHARLES FUTCHER, *Amateur Grower*.

DWARF CHRYSANTHEMUMS.

THERE are two methods of producing dwarf Chrysanthemums which will give fair-sized flowers in November. Dwarf plants are of great utility, not only to the exhibitor constructing a group, but to those who have to furnish an attractive display for the conservatory, and to the amateur having only a low-roofed house in which to flower his plants.

The method of securing dwarf plants most commonly adopted is to grow a number of suitable varieties in the ordinary way from cuttings rooted during the winter months, confining them to a single stem without any pinching or stopping whatever. Encourage a strong, sturdy growth until the middle or end of May, when preparations must be made for propagation. Prepare the 2½-inch pots and soil before taking the cuttings, which require to be inserted as fresh as possible. Place one crock at the bottom of each, and over that some rough material riddled from the compost. The latter should be equal parts of turfy loam and leaf soil, with a fair proportion of silver sand and a little crushed charcoal, well mixed together. Use it moist, filling the pots to the rim, then shake or press it down firmly, surfacing with fine sand. The upper 3 inches of a strong plant makes the best cutting, but it is desirable in most cases to cut lower, and form the cutting to the most convenient length afterwards. The cut-down plant will, properly treated, break into growth, forming several strong growths at the upper part of the stem, from which, when advanced enough, a selection of not more than four to be retained should be made.

In preparing the cuttings, cut transversely below a joint, removing the bottom pair of leaves. Insert firmly in the middle of the pots, give a good watering, and stand them in a frame that has a slight bottom heat. Keep the cuttings close and shaded from the sun until rooted. Immediately this has taken place, which will be seen by the cuttings extending in length, take them out into a cooler frame, where they can be close to the glass and have more air. All may not be ready for this treatment at one time, but it is important that those which are be taken out before lengthening too much. If afforded judicious airing and watering the pots will soon become full of roots, when a shift will be necessary into 3½-inch pots, and finally into 5 and 6-inch pots.

Another excellent method of obtaining good dwarf plants differs from the last, inasmuch as the cuttings are secured from old stock plants retained for the purpose. They are wintered in as cool a temperature as possible, the growths being thinned to a few of the best. The plants after severe frosts are past have sheltered outdoor treatment, which maintains the growths stocky and strong, and cuttings may be obtained better than from young plants. Propagate at the same time, affording the treatment throughout recommended for the others.

The beheaded young plants, after they have started into growth, require to be put into their flowering pots. These plants will form dwarf, bushy specimens, capable of carrying from four to twelve flowers, the latter when terminals are allowed.

Many cultivators depend alone on this latter method of producing comparatively dwarf plants, but it follows that the dwarfest must be produced by late-rooted cuttings; but these cannot perfect satisfactorily more than one flower. Constant and unremitting attention is necessary in the cultivation of Chrysanthemums generally, but more especially so in the case of vigorous-rooted plants, such as even the dwarfest ought to be, growing in small pots. Successful results are not achieved unless the plants are grown in the full sun, which necessitates constant attention to watering, never allowing the plants to flag if possible. In very hot weather it is a good plan to protect the pots from the sun by leaning a board against them. The plants should stand on moisture-retaining materials. When the pots are filled with roots a regular system of feeding must be adopted. Manurial applications, however, ought not to be given when the soil is dry. Well moisten the soil first with clean water, then any nourishment applied will be better absorbed, readily assimilated, and not so easily lost.

It is chiefly the Japanese varieties which give the best results as dwarf plants. A selection of all or some of the following varieties may be cultivated, as most of them are free growers, and produce large blooms. C. Davis, C. H. Payne, Etoile de Lyon, Golden Gate, Lady Hanham, Lady E. Saunders, L. Brooke, Madame Carnot, Madame Gustave Henry, Mlle. Lacroix, Mons. Chenon de Leché, Niveus, Pallanza, Pride of Maidenhead, Rose Wynne, Souvenir de Petite Amie, Vivian Morel, Col. Smith, W. H. Lincoln, and W. Holmes.—E. D. S.

VENTILATING VINERIES.

ON page 404, May 12th, of the *Journal of Horticulture*, Mr. Wm. Taylor of Bath gives some interesting notes on the temperatures of one of his vineries and his mode of ventilating the same on a given day (May 9th last), and asks me how the top ventilation theory would work in such a case, and what I would have done had I been in his place. Well, the first thing I am certain I ought to have done was to thank the Lord for such a fine warm May day, and that my lines were cast in such a favoured place as Bath.

Here in the north we have recently had quite a little May blizzard. On Wednesday morning, May 11th, the hills were white with snow. The following morning we had some frost. Friday morning 5°, Saturday morning 10°, with ice as thick as a penny, a bitter cold wind varying from the N.E. to N.W. blowing from hills from 2000 to 3000 feet high about ten miles off. The outside shade temperature has seldom risen to 50° up to the 16th inst., even with strong sunshine, of which we have had a good deal. Add this to coals up 2s. 6d. per ton lately, could you blame me envying Mr. Taylor in his "warm Bath?"

In fairness to the weather, however, I must admit that with the exception of the cold snap alluded to, we have had a very fine spring, and the country and crops are looking exceptionally well and promising. From this Mr. Taylor might conclude that my remarks on top ventilation applied only to Scotland. As he has had no practical experience further north than Liverpool, I have had none further south than county Durham; but over that area I know that front ventilation is a standard rule of practice, and believe that were it the exception and not the rule, it would be to the benefit of the Vines and plants grown; and I cannot see why this should not also apply to all England. There might be some exceptions, such as the position of the houses, their construction, or an exceptionally warm locality such as Mr. Taylor evidently enjoys at Bath, but even in his case less front ventilation than he has been using might be an advantage.

No one could find fault with his method of ventilating on the day stated. He did not open the front sashes until 12 noon, and the temperature 86°. This, he tells us, was a departure from his usual practice, which evidently is to admit more front air at an earlier period of the day, and before the temperature rises so high. Had he done this on the day in question, the practice, to my mind, would have been faulty; and though I would not say it would have done harm on such a fine day, it was not necessary, and its non-use, even for a limited time, was a step in the right direction. We cannot always rely on a thermometer for the correct shade temperature, either out of doors or inside a vinery. It depends very much when, and how it is placed, and whether the roof is wholly or only partly covered with foliage.

It might not be advisable in all cases to suddenly change the conditions a plant has been grown in, even in the matter of air. It is best to begin new practice with new growth. Plants, like individuals, have a knack of adapting themselves to circumstances. I regret that at this busy season I cannot go more fully into this subject. It is one that might be discussed with profit to all concerned. I trust others may give their opinions and practice. It would be interesting to hear from some who grow Grapes in the sunny south without the use of front air.

I have long known Mr. Taylor through the pages of the *Journal* as one of our foremost Grape-growers, and more than once have admired his fine exhibits of Grapes. His remark, "That he is not too old to learn," shows the right spirit. It is the spirit we all—old and young—should have in seeking to add to our knowledge in anything pertaining to our profession.

Mr. Taylor would like to know the construction and angle of our vineries. When building we are not particular to have them at a certain pitch. What little knowledge I ever had of geometry has got rather rusty. With the aid of a riddle to draw a circle on a potting bench, and a bevelled square, I find the angle to be much the same as Mr. Taylor's house, about 35°. One lean-to with a short 4 feet hip at the back is much flatter than this. This house is 285 feet long by 20 feet wide, facing S.S.E. Ventilation is by a continuous board on one side of the ridge only, which, when open to its full extent, is only 12 inches. It lifts in six sections. This house has a considerable rise, 16 feet in the whole length. The ventilator at the top end is opened much earlier, and freer than those further down. The bottom one has only been opened on three occasions this season, and that only about an inch. The roof runs to 1 foot from the ground at the front.

Another house is span-roofed, running north and south, 300 feet long and 20 feet wide, depth of sides 2 feet, ventilated with a continuous board on one side of the ridge only. Being built on the level ground it requires even airing all over. Up to the first week in May the ventilators were not once opened in this house, and since, with the exception of one day, have not been more than 3 inches up. This house has a more airy and exposed position than the others. The

house described in my lecture is a low span, running north and south, with a sunk path in centre, 150 long by 15 wide, 18 inches deep at the sides. It is ventilated the same as the others, but with this difference, that the board is not continuous, opening two sashes and missing one; 2 inches is the most the ventilators have been opened in this house up till now (May 16th).

I may say that the roofs are glazed with foreign glass, 13 inches wide. We do not trouble much with thermometers in the houses, but I know that on no day this season has the temperature exceeded 90°. —D. BUCHANAN, *Forth Vineyards, Kippen*.

[Very different are the surrounding conditions of the vineries in charge of Mr. W. Taylor and those of Messrs. D & W. Buchanan. There appears to be, by comparison, an extreme of exposure in the one case and of shelter in the other. A warmer air bath we could not very well imagine than in and around Mr. Chaffin's structures, which nestle at the foot of a southern tree and shrub clad declivity, trees also affording shelter, if we remember rightly, from the east and west. It is a veritable sun trap, and an ideal spot, we should imagine, for "red spider." The Kippen ventilators would be inadequate for the vineries at Bath.]

"SILVER LEAF" IN PEACH TREE.

THE shoots submitted by "Gardener," on page 434, last week, were similar in appearance to many Plum leaves, and commonly regarded as due to the action of frost. In the case now in question the trees were grown under glass, and instead of Plum the affected leaves were of Peaches. Everyone growing Peaches against walls, especially in elevated and cold districts, knows the only too familiar "blister," and its being mostly, if not entirely, confined to outdoor trees. Few attribute it to anything but cold winds, particularly easterly, inasmuch as protection and warmth prevent to a great extent attack by the blister fungus. That is the general opinion of gardeners, but is not fully endorsed by fungologists.

So far as I know "silver leaf" has not been observed on Peach trees outdoors, or on Plum trees under glass. The affection may be found on Portugal Laurels occasionally, the trees ultimately collapsing or losing their leaves. This has been attributed to fungus at the roots. I have examined many specimens of "silver leaf," from Sloe up to Green Gage Plum, from Bird Cherry (*Cerasus padus*) up to Bigarreau Napoleon Cherry, and down again to Portugal Laurels, but have not been able to detect any parasitic micro-organism. Similar result has attended the scrutiny of Birch and Hornbeam leaves affected with "silver leaf" until browned. Why? Perhaps this case of "silver leaf" in Peach leaves may afford a clue.

The shoots of Peach trees, now to be referred to, were cut from "a house facing east and standing on limestone, the fruits setting well, but falling off before they attain any size." The leaves are quite silvery on the upper surface, a fair sample being shown in the illustration, fig. 85, at A, and on the under side pale or yellowish green. Beyond the "silver" there was nothing abnormal about them—no malformation, swollen, distorted, thickened, twisted, or curled parts. A section through the tissue revealed nothing beyond the normal form (B). The "silver" was but skin deep (a), epidermal cells somewhat more contracted than usual (b), and those underlying considerably rounder than ordinary (c). No fungoid hypha presented itself, the intercellular spaces being quite free from foreign bodies. This might be attributed to faulty ventilation. Well, I have seen many instances of bad air-giving, but never any producing "silver leaf" in any plant under glass.

Upon further examination I noticed that some of the leaves had brown spots on them, and one leaf in particular was dead at its extremity, being curled up, as injured tissues and dead parts usually are. I thought it a mere cause of water having hung on the leaf and destroyed the part, but the browning ran into the "silver," and had the appearance shown at C. Making a section where the brown joined the silver, the tissues were seen as represented at D. The silver epidermis (d) was tinged with yellow; beneath the cuticle and inner surface were minute yeast-like bodies (e), and these prevailed the intercellular spaces of the subjacent cells (f). The slice was from the upper surface or silver side of the leaf.

Turning the leaf over the under side, shown at E, had the yellowish green hue before mentioned, and on the brown part a sprinkling of white bloom. This was the very thing I had striven to find for years. Bodies were seen on the slide, and at once recognised as *Ascomyces* species, as had also been the mycelial hyphæ. A section gave the result shown at F. It was regarded as a form only of Peach leaf blister fungus (*Ascomyces deformans*), but there was no deformed living leaf, no blister, swelling, or anything of that kind, merely the silver leaf, and where the fruits appeared a browning and destruction of the tissues.

The ascus (g) contains eight spores, and these are liberated by an opening (h). In many cases, however, the spores germinate in the ascus, producing buds or conidia, and then appear many-spored. The discharged spores (i) soon germinate and produce secondary spores, like yeast, by gemmation or budding (G).

I offer no explanation of the phenomena, suffice to state the facts as observed and leave others to speculate. It may be remarked, however, that the case is very distinct from leaf-blisters, but the fungus is practically the same. The mycelial hypha is pushed beneath the cuticle and the epidermis, and the nutritive or vegetative hypha runs or buds between

the formative cells of the host-plant, abstracting their contents and utilising their substance to purposes of its own.

The fungus does not (at least this form of it) blister the leaves, but appears the same as that found sometimes on the browned foliage of "bird's nests" or "witches' besoms" in Plum, Cherry, and Bird Cherry, and the blister form is the "bladder" found on young fruits of those trees, known as "bladder-plum" fungus (*Ascomyces pruni*). A very closely allied species causes silver leaf in *Potentillas*, but yellowish spots also appear, and on these "fruits" (*A. potentillæ*) are produced.

The mycelium of the parasite spreads through the intercellular spaces of the tissues of young shoots in the spring, being perennial, but how it can give rise to "silver leaf" passes my understanding, the suppression of the chlorophyll on the upper surface of the leaf and not lower, or only to a limited extent, being more a chemical than organic characteristic. In

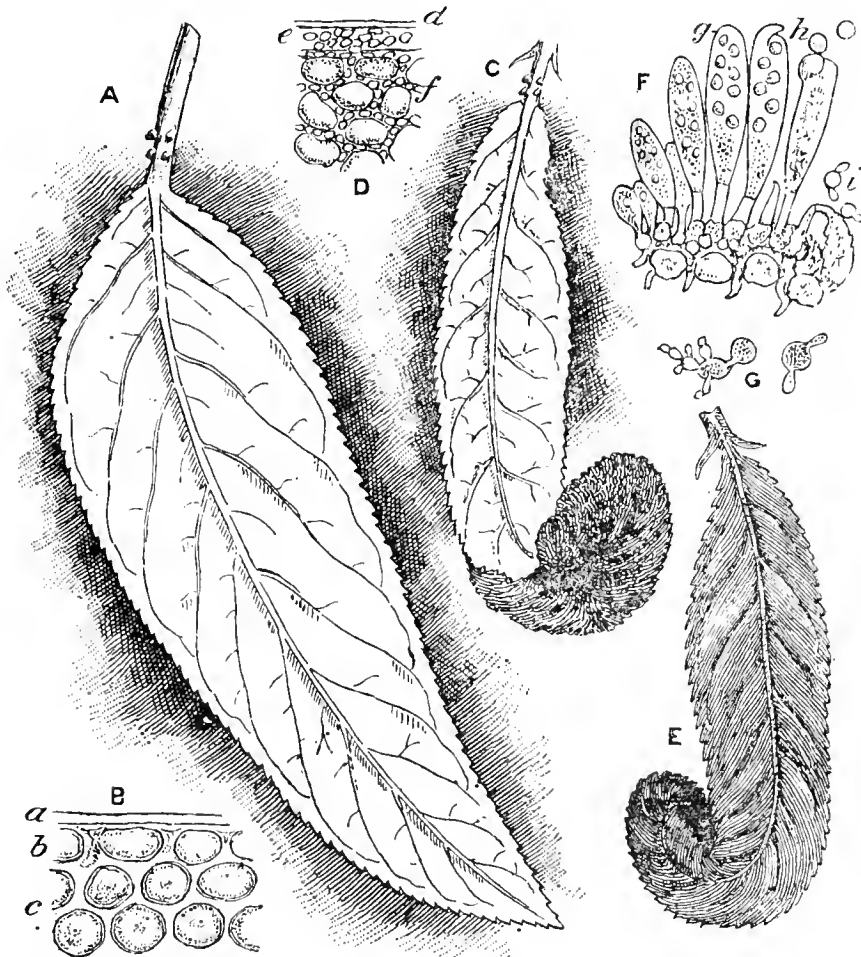


FIG. 85.—SILVER LEAF ON PEACH TREES UNDER GLASS.

References.—A, Peach tree leaf, upper side, showing "silver leaf" (natural size). B, part section of upper surface of leaf enlarged 260 diameters; a, cuticle; b, "silver leaf"; c, epidermal cells; d, formative cells. C, upper surface of small leaf, showing both silver leaf and browned (natural size). D, section of portion of browned part, enlarged 260 diameters; d, silver cuticle; e, yeast-like bodies; f, hyphæ in inter-cellular spaces. E, under side of leaf (natural size). F, section through part of browned portion of leaf, enlarged 260 times, showing fungus = *Ascomyces deformans* var.; g, ascus containing eight spores; h, spores escaping by apical opening; i, spores germinating. G, spores producing secondary growths by gemmation (budding), enlarged 520 diameters.

the case of some Plums the silver or cuticle covering peels off, and it also occurs with various other plants that have been damaged by an overdose of tobacco or nicotine, a new one being formed. I must, however, leave the matter for the research which the subject merits, theory being of little use without facts.—G. ABBEY.

THE LATE MR. GLADSTONE.

QUITE fitting and appropriate is it that a record of the death on the morning of the 19th inst., of the greatest commoner of the century should be inscribed in these pages, of which, as far as his multifarious duties allowed, he was a reader. An instance of the keen discernment of Mr. Gladstone may be mentioned. About ten years ago we published a short note, the first of its kind that appeared in our columns over a period of forty years, describing an example of success in transforming barren Pear trees into productive Apple trees by grafting. Detecting the note, and foreseeing, as the deceased gentleman thought, a practical method of improving our fruit supply, he cited the case in one of his famous speeches. While knowing of instances of success in establishing Apples on Pear stocks, we could not regard them as more than facts of an interesting nature, and so stated at the time. Mr. Gladstone was unquestionably anxious to develop what he called "small cultures." In turning to one of his post-cards we find these words:—

"As regards this small culture in its many branches, I am more and more of opinion that, though in each particular detail the results might appear secondary, the aggregate effect would be a great benefit to our agriculturists, and if we could also gain a still greater increase in the supply of milk, be a most valuable boon to the health and comfort of our population."

Many will remember Mr. Gladstone's advocacy of the culture of small fruit for conversion into jam, which caused some persons to smile and others to plant. He subsequently said: "While the world at large will have plenty of appetite for the consumption of all the jam that is made, British agriculture must depend, not on the smaller but the larger culture—upon the production of great staples on which mankind must live, because though jam is a very good thing, yet mankind could not live upon jam."

Fruit culture was really advocated as a home pursuit worthy of extension, as an adjunct to, not as a substitute for, the usual farm crops. Mr. Gladstone was firm in his belief that the course advised was prudent, for he subsequently wrote to us the following sentence:—"I shall be much gratified if I can truly think that I have been instrumental in drawing increased attention to the subject of fruit growing in this country." That the deceased gentleman was largely instrumental in effecting such extension there cannot be a doubt.

Though Mr. Gladstone did not desire that his death should be followed by tributes of flowers, which he perhaps feared would be overwhelming, he wore them during his life on all great occasions, a favourite being thought to be a white Rose; yet on the presentation of the usual bouquet, when attending the opera, on being asked which really was his favourite, he is said to have replied, "There are so many beautiful flowers that I really don't know."

The great and good man—and people of all shades of opinion admit he was both—left behind him flowers of rhetoric and good counsel which will, perhaps, never die. We cull one over which some of our young friends may well ponder:—"Do not believe those who too lightly say that nothing succeeds like success. Effort—honest, manful, humble effort—succeeds by its reflected action upon character, especially in youth, better than success."

Setting aside contentious politics absolutely, it will be granted by reflecting minds that the world has been made better by the long life and happy, peaceful death of Mr. William Ewart Gladstone.

NOTES ON BOUVARDIAS.

NOT many years since these beautiful plants were considered by many persons difficult to manage, but of late years their requirements have been better understood. They are now amongst the most popular and useful plants of the day, and when well grown are unsurpassed by anything in the same way. Evidence of this is not wanting when we hear of some of our large market growers cultivating them by the thousand; one firm alone, a few years ago, annually grew about 40,000 plants for cutting and general decorative purposes. But, apart from the great value of the Bouvardia from a market grower's point of view, how seldom do we find a garden, even of medium size, without its stock (large or small) of plants which are so admirably adapted for bouquet and buttonhole work?

Stove treatment is usually accorded, but the best results I have seen attained followed the plan of growing Bouvardias without any artificial heat throughout the summer and autumn months. I am speaking from a private grower's point of view when recommending this cool system, as doubtless large growers find it advantageous to accord them stove treatment. Last summer we grew a number in cold frames (this I think preferable to exposing them to the elements). The plants were potted in 48's in March, and by the end of April they were transferred to 24's, keeping them growing steadily and pinching as required to induce stocky growth. At the middle of the month of May they were plunged in ashes in cold frames, and kept partially closed for a few days to give them a good start, afterwards removing the lights, which were only replaced to throw off excessive rains. As the plants advanced in growth they received applications of liquid manure with benefit, and occasionally a slight dressing of an approved artificial fertiliser.

The compost used consisted of equal parts of peat and loam, and half a part leaf soil and sand. If the cultivator is desirous of turning his plants out of the pots, this will be found a good mixture, especially if ample drainage is provided. I have practised both methods, and I am in favour of retaining them in the pots for obvious reasons—viz., the plants may remain out much later in the season, and receive no check when the inclement weather compels us to house them. So long as the weather is favourable they should remain, for I have made note of the fact that the autumn dews are highly beneficial to the Bouvardia. In the event of the cultivator requiring the plants in bloom early in the season, of course they should be taken in sooner. Another point in favour of retaining them in the pots is, that as the plants advance in growth (which will be very rapid when they are once established) the frames may be raised with bricks at the bottom, so that the lights may be put on without danger of bending or breaking the young shoots. This will also allow the air to pass through the frames freely, and will assist in ripening the wood. From the luxuriant health of our plants last summer, and the profusion of bloom which they bore for several months, I am convinced that the system is much the best for the private gardener.

A temperature of about 50° to 60° should be accorded the plants when housed, and the applications of liquid manure continued until well in bloom. A damp close atmosphere at this period must be avoided, and great care should be exercised in watering, not to give them too much. Syringing in bright weather is essential to keep down insects. Mealy bug, red spider, and thrips are very partial to the foliage, but with pure air and clean water few of these enemies will make their appearance, and if they do, no difficulty will be found in keeping them in check.

Cuttings of the young shoots, when about 2 inches in length, will root

freely in the spring if inserted in sandy soil, covered with a bell-glass, and plunged in the bed of the propagating pit. These should, when well rooted, be potted into thumb pots and placed on a shelf in an intermediate house, afterwards stopping and shifting them as required. By the following spring these will be well-established plants, suitable for growing by the method described above. The most valuable of all the Bouvardias is *B. longiflora*, which bears large pure white fragrant flowers, whilst of the smaller flowered varieties especial mention may be made of Alfred Neuner, Dazzler, Hogarth, President Garfield, and Vreelandi.—H. T. M., Stoneleigh.

TAMWORTH PANSY AND VIOLA SHOW.

MAY 21ST.

IT was anticipated that as this popular show, which was held in the attractive grounds of Mr. Wm. Sydenham at Bolehall House, was dated to take place a week earlier than customary would somewhat militate against a good display, especially with the unpropitious weather which has recently prevailed, would be somewhat inferior. Such a fear, however, was not fully realised, though owing to the showery weather on the day of the show the attendance of visitors was not so large as usual. The number of exhibits, however, was fully as high as those of previous exhibitions. The quality of the flowers was on the whole good, as also was that afforded by the splendid assortment distributed over the pleasure grounds and nursery. Another pleasing feature was the profusion of *Scilla campanulata* luxuriating beneath the groves of tall trees skirting a portion of the grounds, in striking contrast to the adjacent wide borders containing thousands of bushy plants of the charming and exceedingly floriferous Viola Mrs. J. Donnelly with its bluish white self-coloured flowers intermixed with lines of the Poet's Narcissus. In the flower garden alone in front of the residence large beds of various coloured Violas served to complete the picture.

A feature in the large exhibition tent were the table decorations and other designs, such as wreaths, crosses, harps, and lyres, and for which, in addition to the first prize of 2 guineas for a dinner table decoration, valuable prizes were offered and worthily gained. The successful exhibitors of dinner table decorations were Mrs. Lovatt, Mr. W. B. Crane, Mr. J. M. Johnston, and Mr. John Smellie an extra prize, in the order named. Mr. Robert Sydenham, Birmingham, contributed (not for competition) an attractive table, composed chiefly of double and single Poets' Narcissi, Spanish Irises, and Carnation Uriah Pike. The competition table exhibits were severally composed of Pansies and Violas, with ornamental foliage, such as Ferns and Asparagus. It may here be remarked that in Mr. Smellie's exhibit a grand seedling "Fancy" Pansy named Miss Neil was awarded a first-class certificate. It has a dense rich purple blotch, edged with white; top petals crimson, double edged, shading off to pale yellow, and slightly striped edging. The three blooms were much admired, as also was another seedling named William Gardiner, a unique variety of large size and substance, rich cream top petals, crimson shading, dark purple blotch.

A first-class certificate was awarded to a curious little Violette, of quite a new type, exhibited by Mr. W. Sydenham, named Tom Thumb. It is an exquisite Viola for the rockery, or as a dwarf border edging. It is a rayed rich yellow, and as exhibited in spray fashion looked charming. Amongst other striking varieties of Violas noticeable in Mr. Sydenham's collections, arranged as sprays, places of honour must be given to Stephen, a deep yellow rayed and a greatly improved Bullion, with a good habit, eclipsing even the beautiful Pembroke; whilst such charming varieties as Devonshire Cream, Florizel, Pembroke, Blanche, Formidable, Althea, Kitty Hay, Lady Franklin, Masterpiece, Amy Barr, Rover, Lark, and Mrs. Wm. Greenwood, a canary yellow self, formed a complement of great beauty and excellence.

Reverting to the competitive exhibits, of which space will not allow of detail, mention may be made of the meritorious designs in Pansies and Violas contributed by Miss Johnston, Miss E. Sydenham, and Messrs. J. M. Johnston and J. Smellie, all being distinguished by excellence of artistic taste. In the various classes for blooms of Fancy Pansies and sprays of Violas, Mr. W. Maxwell of Glasgow took the lion's share of prizes, his sprays being set up on sloping stands of various shapes, covered with black velvet, thus reflecting the flowers to great advantage.

Amongst other exhibitors and prizetakers were Mr. James Maxwell; Mr. Egan, Belfast; Mr. Leonard Brown, Brentwood; Mr. Fowler, Freasley Hall, Tamworth; Mr. Pearson, Newport; Mr. Howell, Oxford; Mr. Stevens, Wilnecote, and Mr. T. Nadin, Alnecote, who exhibited more or less in the cut bloom classes. Altogether the show of exhibits was a success, and was considered to be one of the best of its kind yet held at Tamworth.

DOUBLE GORSE.—For about three months during spring and early summer masses of this plant make a glorious sight, every branch being smothered with golden blossoms. For gardens, or where cover is needed in parks and other places, it has decided advantages over the type, as it is a dwarfer and more compact grower, and after flowering, instead of seed pods, there is a mass of bright green shoots. Anyone who has a few plants can quickly raise a stock by inserting cuttings of half-ripened wood in a bed of sandy soil in a cold frame during August, keeping the frame closed and shaded until roots are formed. When rooted, they should be potted and kept in the pots until they can be planted in permanent quarters.—W. D.

THE YOUNG GARDENERS' DOMAIN.

HARDY FRUITS AND THEIR CULTURE.

IN my opinion nothing can be more interesting or of so much importance to young gardeners as the study of hardy fruits and their culture. Where every attention is given to fruit culture under glass we find, as a rule, first-class produce; but in the hardy fruit garden we get almost the reverse, simply because the trees do not get one-half the attention they so well deserve. This is proved by the fact that where a gardener does take an interest in hardy fruits, we see plainly that by perseverance he can produce a good sample of fruit, which is admired by all who have the pleasure of visiting his fruit garden. I am well aware that in many localities the soil is not suitable for the cultivation of fruit in its present condition, but much may be done by improving the soil and making it suitable for fruit trees in future.

Where it is desirable to improve the soil, should it be too wet, stiff and clayey, the first essential part of the work will be to have it drained in a thoroughly practical manner. For the improvement of the soil, a time must be chosen when it is at its driest, autumn, I think, being preferable, as it may then be left in a rough state through the winter. It should be trenched about 2 feet deep, and a quantity of lime, soot, and wood ashes be thoroughly incorporated with the surface soil. Where the staple is of a poor and sandy nature, mix with it soil of a tenacious character, when the whole may soon be made to suit fruit trees. If the ground by physical means be brought under the influence of the weather with a free passage for water it will quickly become more fertile, and in a proper state for sustaining and encouraging tree growth, and the improvement of the fruit both in size and quality.

As regards the proper time for lifting trees various opinions are held, but in my opinion this work should be done in the early autumn, when the weather is favourable. Commence as soon as the leaves begin to fall, and complete all planting before the bad weather comes. My reason for recommending autumn planting is because I believe the trees have a much better chance of getting their roots well established before the hot sun comes upon them, and are therefore in a better condition for the roots to supply the necessary elements for the building up and ripening of the season's growth. Plant firmly, and pay strict attention to the spreading out of the young roots, being most careful to keep them as near as possible to the surface. Make the trees secure with stakes. Plant only healthy trees, and grow varieties which have been found suitable for the locality and the position they are to occupy. With regard to their culture, I hope to have the pleasure of writing a few notes later if space is available.

—J. F. D., *Yorks.*

VEGETABLE ROOTS FOR FORCING.

MANY readers of the *Journal of Horticulture* give scant attention to the question of vegetable cultivation. This is unfortunate, as the subject is a very wide and interesting one. Respecting the details of vegetable gardening, many hazy notions exist among young craftsmen, and I propose in this short paper to deal with one point only, "vegetable roots for forcing."

It is commonly imagined that forcing merely means lifting roots in the autumn, and placing them in warm positions. There is, however, no art in the actual forcing of vegetables, as heat and moisture will accomplish all that is required. The whole secret of success is to have a supply of roots in a proper condition when required. The quality and quantity of the supply during the winter will depend largely upon the way in which the culture has been performed. No one need hope for a good crop from badly cultivated roots; on the other hand well-grown roots will always force readily, and the produce will be a credit to the grower, and give satisfaction to the consumer. Good Seakale, Asparagus, and Rhubarb in the winter months are valued more than any of the other period. A gardener who has a supply of roots from which to produce them need not worry much about the severe weather destroying his outside vegetables. When a sufficient supply of forced ones of high-class quality can be obtained, greens from the open will not be in nearly the demand they otherwise would be. This remark does not imply that one should grow nothing but forced vegetables, but that we should have at disposal a sufficient supply to bridge over any deficiency in the greens. Roots that have been forced are not of much use for planting again, so it is best to have a constant succession each year.

Sufficient Asparagus seeds should be sown annually to obtain the number of plants required. They must be left in the seed bed during the first season, and then be planted out about a couple of feet apart. By the end of the third season they will be in a good condition for forcing. Seakale, also, can be easily propagated from seed, but I think the quickest and most satisfactory way is by division of the root. If the strong roots are cut in lengths, and planted in a warm house, in a short time they will start into growth, and when the weather is favourable they can be planted out in the open by the end of March. Place in rows about 18 inches apart on rich soil, that has been well trenched and manured beforehand, and they will make splendid crowns by the following autumn.

It is, I believe, a habit in many gardens to grow Rhubarb outside till it begins to get poor, and then to dig it up for forcing. This is a great mistake, and, of course, never pays for the time and trouble. Strong healthy roots, having several prominent crowns, should be divided about the beginning of March, and planted in good soil, then splendid forcing roots will be formed by the following autumn. Rich soil, and exposure to as much sun as possible, are the chief points to be remembered in growing roots for forcing. They should never be placed, as is often done, in odd corners, but given as good a position and as much attention as is accorded to other vegetables. If they are overcrowded, and weak growths are made in the summer, good produce cannot be expected in the winter.—S. S.



FRUIT FORCING.

Cucumbers.—Plants in houses that have been in bearing since the beginning of the year may be cleared out, and the house cleansed preparatory to replanting with young plants or Melons for a late crop. This answers where there are several houses, and the plants are grown to provide fruit for marketing as regards Cucumbers; but where the old plants are fairly healthy, and fruit not supplied from other sources, such as pits or frames, they may be kept fruiting a little longer by removing some of the soil, and replacing with lumpy loam, afterwards surfacing with sweetened horse droppings. Thin-out the old growths, and encourage young in their place; shade from powerful sun, syringe in the morning and afternoon, and damp well before nightfall. Admit a little air at 75°, increasing with the advancing sun, keeping through the day at 85° to 90°, and closing early, so as to retain the latter degree, or advance to 95° or 100°. Fire heat need only be employed to maintain a night temperature of 60° to 65°, and to insure 70° to 75° by day.

Pits and Frames.—Plants in these will require attending to for ventilation from 7.30 to 8 A.M., and in the hottest part of the day a slight shade from fierce sun will be beneficial. Keep the plants watered as required, and sprinkle on fine afternoons. Avoid overcrowding the foliage, thinning well, and keeping up a succession of bearing wood.

Cherry House.—When the whole of the crop is ripe, the chief consideration will be to keep the fruit fresh and prolong the season of supply as long as possible. Shading will do so, but it is only desirable where the fruit is exposed directly to the sun, owing to limited foliage. Free ventilation must be attended to, and in hot weather a sprinkling of the surface of the border in the hottest part of the day will assist in keeping the fruit plump. The supply of water must not be neglected, for dryness is inimical to the development of the buds for the ensuing crop of fruit and health of the trees.

Peaches and Nectarines.—*Early Forced Houses.*—The early varieties, Alexander, Waterloo, Early Beatrice, and Early Louise Peaches, with Cardinal and Advance Nectarines, are nearly cleared of their fruit. The shoots on which the fruit has been borne, if not required for the extension of the tree, must be cut away to the successional growths at the base, to admit light and air freely to the foliage. Syringe forcibly to cleanse the trees of red spider, and if this pest and scale continue troublesome, promptly use an insecticide. To prevent over-maturity of the buds, ventilate to the fullest extent on all favourable occasions. Keep gross laterals stopped, but avoid checking the growth by removing large quantities of foliage at one time. Trees of the second early and mid-season varieties will now be ripening their fruit, and must not be syringed, though if the trees become infested with red spider a thorough syringing may be given when there is a prospect of a fine day. The trees must have water at the roots in sufficient quantity to keep the foliage in a healthy state.

Houses Started in January.—The fruits in the structures brought forward gently, and the varieties second early or midseason are now fast advanced towards ripening. The leaves will have been turned aside and the fruit raised, so that the apex receives most light. If the weather prove cold and wet, gentle fire heat will be necessary to secure a circulation of air constantly, as moisture deposited on the apex induces "spot," maintaining the temperature at 60° to 65° by night, and 70° to 75° by day. Cease syringing as soon as the fruit begins to ripen, and take care to have the trees free from red spider before this stage, or the pest will increase so rapidly as to prejudice future crops. Give a good watering to the border if necessary, mulching with some light material.

Succession Houses.—During stoning the trees must not be hurried, but be given time to complete the process. Allow a free extension of the laterals as an encouragement of root action, but do not crowd the principal foliage, and keep insects in check by syringing twice a day. When the fruits have stoned remove all surplus ones, and turn the others to the light, to insure their colouring well from the apex. Give thorough supplies of water through a surface mulching of manure, and supply top-dressing or liquid manure to any weakly trees. Vigorous trees, however, must not be too liberally fed, as it will only induce grossness, which must be studiously avoided. Ventilate early, and close early in the afternoon, so as to maintain a temperature of 80° to 85°, and ventilate a little afterwards for the night, the temperature being allowed to fall to between 60° and 65°.

Late Houses.—Young shoots that are to carry next year's crop must be tied-in, and allowed to extend as far as space admits, taking care to avoid overcrowding. Pinch all side shoots on extensions that are not wanted for next year's fruiting or for furnishing the trees, training a growth from the base of the present bearing shoots. In thinning the fruits, leave a few more than will be required for the crop. Keep the foliage clean by syringing twice a day in fine weather, and always early, to allow the leaves to become dry before night. Mulch the borders with short manure, and water thoroughly when necessary. Ventilate early, and increase the ventilation with the sun heat, closing early if the ripening is to be accelerated, but if wanted late keep as cool as possible.

Young Trees.—These in course of formation must be properly

disbudded, leaving the main branches or shoots about 15 or 18 inches apart, and the bearing wood at those distances along them. Train the extensions their full length, and pinch the side shoots on last year's growth to two or three leaves, so as to form spurs, and to one of subsequent growth. Laterals on current year's wood should be pinched at the first joint, and successional growths so treated as made.

THE BEE-KEEPER.

SIZE OF FRAMES.

THIS we consider of more importance than the size of the hive, for if the latter is originally large enough, it may be extended or reduced by regulating the division board. But when the frame is once made it cannot be altered without making a change throughout the hive.

It is, however, a mistake to suppose that an inch either one way or the other will make any material difference, either in the number of bees or in the weight of honey obtained from a hive. If there is a recognised size, as good as any other, in general use among bee-keepers, it is obviously as well to use it. We are therefore of the opinion that what is known as the "Standard frame" may still with advantage be used throughout the country.

FRAMES PARALLEL TO ENTRANCE.

Should frames be placed parallel to the entrance, or at right angles? The majority of the frames in our apiary are placed in the latter position, but several are parallel to the entrance. During the past winter we observed them closely to see if there were any difference in the condition of the stocks, either in the number of bees in the hives at the present time, or in the amount of stores consumed. One is similar to the other in this respect; some are strong, whereas others are weak.

We are inclined to think that during a severe winter the bees may be kept warmer if the frames are placed parallel to the entrance and the outer combs removed, the dummy being placed close up to the frames. This will allow for an open air space, and the bees will be warmer in consequence, while the brood nest may then be gradually extended in the spring. In ordinary seasons, however, one cannot detect any difference in those tried on the two systems, only what is usually observed where several stocks are kept, that some will always be stronger than others in the spring.—AN ENGLISH BEE-KEEPER.

TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **8, Rose Hill Road, Wandsworth, S.W.**, and **NOT** to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Late Inquiries.—Questions which only arrived the day before making up for press cannot be answered in the present issue, in consequence of exceptional pressure.

Heating a Small Greenhouse (F. G.).—Boilers of the type illustrated in our advertising columns on the 12th inst. are extensively employed in heating such houses as you describe, set flush with one end of the house. If you write again be so good as to comply with the requirements at the head of this column as to sending name and address.

Transplanting Auriculas (H. T. H.).—We have divided and planted border Auriculas with the most satisfactory results at this season of the year when the weather is favourable, as it is now, for the operation. If dry weather follow they must be kept moist, and if in a naturally shaded position all the better. We divided and planted some ten days ago, and they do not seem to have sustained any check to growth.

A Tomato Trouble (Tomato).—As you neither know what is the matter with the plants, explain their condition nor send a sample, how do you think it possible that we can understand the case and advise thereon? See reply to "G. E. and S.," also "N. G. F.," whose cases may or may not differ from yours.

Lophospermum scandens Roots Diseased (N. G. F.).—The decay of the tissues of the fleshy roots or root stems probably arises from the heavy and moist condition of the soil. We have noticed similar cases, and usually found root-stem eelworm in association, but there is none in either the living or decayed parts of the root sent, and the threads of the fungus present do not enter the living tissues. Probably the decay has been set up by some pest, and spread by an excess of moisture. As the stem has been girdled immediately beneath the soil, the only chance of saving the plant will be by encouraging roots from the collar, above the injured part, if you consider it worth while.

The Tree Tomato (W. J. B.).—The fruit sent is a small example of *Cyphomandra betacea*, a native of Brazil, also known as *Solanum fragrans*. We figured a much larger fruit a few years ago, as grown by Rev. W. Wilks. The plant is popularly known as the Tree Tomato. Mr. Wilks' "tree" was 9 feet high, and produced many fruits, which ripened during November, December, and January, in an orchard house from which only frost was excluded. The fruit when raw has firmer flesh than the Tomato, and is slightly more acid, but when cooked is scarcely distinguishable from the ordinary Tomato. *Cyphomandra betacea* is a member of the *Solanum* family. It has been cultivated in botanical gardens for many years, but is rarely seen in private gardens. It is easily grown, and ornamental when the acute egg-shaped fruits are ripe. The leaves you sent, as large as those of fine Spinach, and equally soft, arrived quite fresh, though having been packed in soft fresh grass—the best of all material for keeping flowers and foliage fresh during transit.

Mottled Tomatoes (A. G. W.).—The Tomato is not affected by any recognised disease. The serious defect of imperfect colouring has been attributed to various causes, that of cross-fertilisation with the yellow-fruited variety being one, but we are more inclined to attribute it to soil influence as affecting the chlorophyll. We have found that the use of manures yielding nitrogen steadily, such as fish meal and native guano, with a little double sulphate of potash and magnesia, and a moderate amount of dissolved bones, dry and crumbling, give good results under such circumstances. A little sulphate of iron also tends to intensify the green and afterwards the ripening colour, not using more than a quarter of an ounce to a gallon of water, and only occasionally. There is a small black mark in the "rind," but we cannot determine this to be any form of parasitic growth, and it certainly does not extend into the adjacent tissues. We should give plenty of air and expose the plants to as much light as possible, keeping warmth in the pipes as may be necessary, so as to admit of a little air constantly. Perhaps some of our experienced correspondents will favour with their views on the serious defect indicated.

Vine Leaves and Grapes Diseased (Essex House).—The splendid leaves, deep shining green, are very slightly infested with Grape mould fungus, *Botrytis cinerea*, and the berries are affected with rust, upon which there appears a trace of mildew, *Oidium balsami*. We see no cause for alarm, as the mould has possibly been favoured by the recent wet and cold weather, necessitating keeping the house close, and the rust caused by cold air coming in contact with the berries causing a chill and contraction of the epidermis. We should dust a little sulphur on the parts affected, but not anywhere else, keeping a sharp look out, and if there are signs of the affections spreading use the flowers of sulphur all over the Vines. This we hardly think will be necessary (and it is best avoided if possible), as the little sulphur used will give off fumes, arresting the mould and mildew. It will hardly answer to use sulphur on the hot-water pipes at the present time, for the cuticle of the berries is very tender and easily rusted. If you use it there apply very lightly, and do not heat the pipes highly, but only sufficiently to give off faint fumes of sulphur. We do not know of anything you can do to prevent the reappearance of the mould and mildew, except being more careful in ventilation. In that respect we think there has been a little error at some time, which has led to the trifling mischief. The leaves and bunch are otherwise remarkably fine.

Diseased Lilium (H. T. H.).—The leaves and flower stem have been destroyed by the so-called Lily disease fungus (*Botrytis galanthina*—the conidial condition of *Sclerotinia bulborum*). It is very destructive to species of *Crocus*, *Galanthus*, *Hyacinthus*, *Lilium*, and other monocotyledonous plants, but of all useful products affects Onions the most seriously. The ways of the parasite are inscrutable. It will sometimes take whole rows of plants, at others only a patch here and there, and in some cases only destroy some parts of a plant. Possibly the tissues of the plants are weakened by some cause, and in such condition as to fall an easy prey to the fungus. We have made several experiments in this connection, and find that the differences are mainly attributable to divergences in constitutional proclivities and conformation of epidermal tissues. Only the tender growths are affected in your case, the bulb being quite sound, also the lower part of the stem; the fungus apparently having no power over the matured tissue and hardened epidermis. We advise the cutting away and burning of all the damaged parts at once, for in these appear the minute elongated black bodies or sclerotia by which the parasite passes over from year to year. After this dress the plants with best air-slaked chalk lime, dry and floury. It is easily applied to the plants by means of an old worsted stocking shaken up and down over them. This we have found of service, giving a good coat, not when wet with rain, but in the evening or morning when only very slightly damp with dew.

Vines Injured by Petroleum (G. G.).—The last year's wood has the bark damaged by the dressing, and the tissue dried to some extent, hence the sap could not rise freely, and the growths are stunted in consequence. This we consider to be mainly the cause of the present condition of the growth, combined with the bad condition of the Vines at the roots, but the petroleum has been the most active agent of the mischief. We think they will come round with careful treatment, keeping the house rather moister than usual so as to check evaporation. The lime used should be slaked, of course, preferably air slaked, and as the Vines are weak use with it an equal quantity of soot by measure, applying $\frac{1}{2}$ lb. of the mixture per square yard, and pointing into the border evenly without injuring the roots. This will improve the soil and Vines, which is very desirable.

Peach Leaves Eaten by Weevils (C. J. N.).—The small golden-bronze culprits with pitchy spots are the clay-coloured weevil (*Otiorhynchus picipes*), and the black ones the grooved or black Vine weevil (*O. sulcatus*). You have very accurately described their habits—namely, that of feeding at night, and of this advantage should be taken to capture them. They fall readily from their food plants when these are disturbed or a light is brought into their presence. Hence it is advisable to lay white cloth or paper beneath the trees in the daytime, and at night, after dark, enter the house very carefully with a bull's-eye or darkened lantern, then suddenly shake the trees, turn on the light, and capture the pests. They remain still for a short time, and are easily seen on the white surface for clearing away. We use an old tin containing a little paraffin oil for placing the beetles in as swept up. This practised for a few nights will soon reduce them and prevent much further injury being done.

Tomato Leaves Spotted (G. E. and S.).—The Tomato foliage shows spots of the fungus called *Cladosporium lycopersici*, but there are no outgrowths, these appearing to have been arrested by the cupric sulphate solution, and we do not consider the enemy can make any great headway. We should keep sufficient heat in the hot-water pipes to admit of a little air being given constantly, and during favourable weather freely. The plants cannot have too much light and air, accompanied by the requisite amount of heat, for insuring steady progressive growth. The stem and roots of the plant are quite clean and healthy, but rather weak. We do not, however, see why they should not improve and produce a good crop of fruit. It may be advisable to continue the light dressing of cupric sulphate solution, but it is not desirable to use it long after the fruit sets. Spot usually takes place at the flowering time. The main thing is to ventilate freely, taking care that the flowers do not damp, or the tender fruit scald by water hanging at the "eye." Please note the correct editorial address above, misdirection causes delay and shrivelled specimens.

Cucumber Roots Knotted (N. G. F.).—The roots have the knots or small nodosities characteristic of root eelworm (*Heterodera radicola*), and contain females embedded in the tissues. It is a pity you did not scald the soil used for top-dressing, as the plants grew so well in that they were at first planted in, and which was scalded. Perhaps, however, the pests were in the house, which you do not mention as having been treated with boiling water. Unless prompt in your application of the solution of soluble phenyle there will be little hope of saving the plants, using a wineglassful to 3 gallons of water. At this strength, 1 part soluble phenyle in 240 parts water, or 1 fluid ounce to $1\frac{1}{2}$ gallon of water, we have not found any injurious effects on the roots of Cucumber plants. For Tomatoes, 1 part soluble phenyle to 160 parts water, or 1 fluid ounce to 1 gallon of water, we found quite safe, but it would injure tender plants. One fluid ounce to 6 gallons of water will disinfect soil or prevent attack, but as a remedy is of no use whatever; indeed, prevention must be attended to, for the use of any substance after serious mischief has been done may be of little or no service.

Strawberries Diseased (G. T.).—The fruits are affected by the mould fungus (*Botrytis vulgaris*), commonly regarded as the consequence of the fruit receiving a check from currents of cold air driving full upon the tissues, and this followed by a period of damp, when the fungus pushes out growths, otherwise the fruits dry up and shrivel; but the fungus always appears under conditions favourable to its development, and is followed by small black dots or sclerotia, by which it tides over from year to year. We do not know of anything likely to arrest the spread of the fungus beyond the destruction of the affected fruits, by or before they become mouldy; to prevent against its recurrence guard as much as possible from cold winds and the other extreme of a close stagnant atmosphere, taking care not to allow moisture to be deposited on the foliage or fruit, by admitting a little air constantly and increasing it from the early part of the day. We suffered most from it with the air admitted by the ventilators driving directly on the fruit, and not at all where the air came below the shelves and the fruit not directly exposed to the powerful rays of the sun. No application will destroy the fungus, as it is wholly endophytic; besides, copper solutions cannot safely be used in such cases.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than

six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (G. S.).—The Orchid is *Lycaste aromatica*; the other flower *Cantua dependens*. (R. L.).—1, *Escallonia macrantha*; 2, *Arabis albida*; 3, *Cerasus avium flore-pleno*; 4, *C. lusitanica*; 5, *Gesnera*, species doubtful, flower injured, perhaps *G. splendens*. (W. J.).—1, *Fraxinus Ornus*, the Flowering Ash; 2, *Prunus* (*Cerasus*) *padus*. (W. P. G.).—1, *Sedum azoideum variegatum*; 2, *S. pallidum*; 3, *Cheiranthus alpinus*. (O. D. W.).—1, *Saxifraga granulata flore-pleno*; 2, *Centranthus macrosiphon*. (W. B.).—*Cerasus virginiana*. (W. J. B.).—*Cyphomandra betacea*, the Tree Tomato, see preceding.

COVENT GARDEN MARKET.—MAY 25TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	0 0	to 0 0	Lemons, case ...	11 0	to 14 0
Cobs ...	0 0	0 0	St. Michael's Pines, each	2 6	5 0
Filberts, 100 lbs. ...	0 0	0 0	Strawberries ...	2 0	5 0
Grapes, lb....	1 6	3 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz....	1 0	0 0	Parsley, doz. bnchs...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle...	1 0	0 0
Coleworts, doz. bnchs.	2 0	4 0	Scorzonera, bundle ...	1 6	0 0
Cucumbers... ..	0 4	0 8	Seakale, basket...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, lb....	0 6	0 8	Turnips, bunch...	0 3	0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Fuchsia ...	6 0	to 9 0
Aspidistra, doz. ...	18 0	36 0	Heliotrope, per doz. ...	6 0	9 0
Aspidistra, specimen ...	5 0	10 6	Hydrangea, per doz. ...	6 0	9 0
Calceolaria, per doz. ...	6 0	9 0	Lilium Harrisii, doz....	12 0	18 0
Cineraria, per doz. ...	6 0	9 0	Lobelia, per doz. ...	4 0	6 0
Dracæna, var., doz. ...	12 0	30 0	Lycopodiums, doz. ...	3 0	4 0
Dracæna viridis, doz. ...	9 0	18 0	Marguerite Daisy, doz. ...	6 0	9 0
Erica Cavendishi ...	18 0	30 0	Mignonette, doz. ...	4 0	6 0
„ various, per doz. ...	12 0	24 0	Musk, per doz. ...	2 0	6 0
Euonymus, var., doz. ...	6 0	18 0	Myrtles, doz. ...	6 0	9 0
Evergreens, var., doz. ...	4 0	18 0	Palms, in var., each...	1 0	15 0
Ferns, var., doz. ...	4 0	18 0	„ specimens ...	21 0	63 0
„ small, 100 ...	4 0	8 0	Pelargoniums, scarlet, doz.	4 0	6 0
Ficus elastica, each...	1 0	7 0	„	9 0	15 0
Foliage plants, var., each	1 0	5 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2 0	to 4 0	Mignonette, doz. bnchs...	2 0	to 4 0
Arum Lilies, 12 blooms ...	3 0	4 0	Myosotis, dozen bunches...	1 0	2 0
Asparagus, Fern, bunch...	2 0	4 0	Narciss, dozen bunches ...	1 0	3 0
Azalea, dozen sprays ...	0 6	0 9	Orchids, var., doz. blooms	1 6	9 0
Bluebells, dozen bunches	1 0	2 0	Pelargoniums, doz. bnchs.	4 0	6 0
Bouvardias, bunch ...	0 6	0 9	Polyanthus, doz. bunches	1 0	1 6
Carnations, 12 blooms ...	1 0	3 0	Roses (indoor), doz....	0 6	1 6
Eucharis, doz. ...	3 0	4 0	„ Red, per doz. ...	1 0	3 0
Gardenias, doz....	1 0	3 0	„ Tea, white, dozen ...	1 0	2 0
Geranium, scarlet, dozen			„ Yellow, doz. (Perles)	1 0	2 0
bunches ...	3 0	6 0	„ Safrano (English) doz.	1 0	2 0
Iris, dozen bunches ...	4 0	6 0	„ Pink, dozen ...	3 0	5 0
Lilac (French), bunch ...	3 6	4 0	Smilax, bunch ...	2 0	3 0
Lilium longiflorum, 12 blms	2 0	3 0	Tulips, dozen bunches ...	2 0	4 0
Lily of the Valley, 12sprays	0 6	1 0	„ Parme (French),		
Maidenhair Fern, dozen			bunch ...	2 6	3 6
bunches ...	4 0	8 0	Wallflowers, doz. bnchs...	1 0	3 0
Marguerites, doz. bunches	1 6	2 6			



WATER FARMING.

OF course this title must refer to the harvest of the sea, to no other branch of industry is it applicable. Indeed we do not quite agree thereto; our Editor gives us a liberal margin, but as our column is headed "Home Farm," we cannot quite stray so far as to lose ourselves in ocean depths. We try to keep on "terra firma," though at times we may sink over boot-tops in the mire. Perhaps

that is the reason why farmers are often referred to as real old "stick i'the muds;" although privately our opinion is that we move with the times, or perhaps it is that we are involuntarily carried along by the spirit of the age.

Who among Londoners is not familiar with the street cry of "Creeses, fresh Watercreeses?" The "creeses" sounded uncommonly long. That there is a great demand for this tea relish is proved by the ready sale of the quantities that find their way into not only the London markets, but into the markets of the other great cities, the centres of our thriving industries. We all require diversities of food, and he is a wise man who partakes largely of fruit and vegetable fare. That it is a natural taste is amply proved by the avidity with which children turn to anything in the fruit or vegetable line. They do not stop to discriminate between what is wholesome and what is not, and sour and unripe fruits are consumed whenever the opportunity offers. No thought of after unpleasant consequences ever act as deterrents.

We suppose that we who live among abundant garden produce are satisfied with it, and do not go far afield to find refreshing green food. For the town dwellers things are on a totally different footing. All food has to be bought and paid for in hard cash, and often at dear rates. So that when bread, meat, Potatoes, eggs, and milk are bought there is not much surplus left for other little delicacies.

The teeming population, the mass of the working classes, must have something cheap, something good of its kind, and something easily prepared. Hence the demand for the cheap salad, the Cucumber, the bunch of spring Onions, the cluster of rosy Radishes. These are only to a great extent summer delicacies, and the bunches of Watercress have to fill a large vacuum. We had till lately no idea of the extent of this kind of farming, for farming it must be called—it reaches beyond market gardening proper.

It is not often (according to our critics) that we English farmers are first in the field in any new enterprise, but this time it must be accorded to the credit of an Englishman that he was the first to make Watercress culture a study. As early as 1808 Mr. William Bradbery began to grow this form of salad as a crop at Springhead, in Kent. The name suggests the first, we might say the greatest, requisite for a successful business—"Springhead." "An abundant and perpetual stream is an absolute necessity." A stream that is not affected by summer drought, and whose flow is too strong to be frozen in winter.

Certain land, too, is more or less suited to the purpose. Sandy sub-soil entails a great outlay of capital, as the water is liable to filter away and the sides of the beds want much wharfing to make them secure. Then, again, strong clay speaks for itself—difficult of manipulation. Chalk and gravelly loam best meet the requirements of the case. But supposing the Cress grown, it does not do to be too far from a market; to be in perfection it must be eaten fresh. When we say far from a market, we mean rather within easy distance of a good train service, for from Hampshire to Liverpool is a fairly long journey.

Cress growers have several difficulties to contend with. Water rats, freshwater shrimps, water beetle, and the caddis worm, with small snails, are all enemies to the growing plant, and the water, too, produces, like the land, obnoxious weeds. Then, again, whole beds may be swept away by flood water, a catastrophe very difficult to prevent. Of course, it goes without saying that the water in which the Cress is grown must be absolutely pure; no sewage, no nastiness of any sort must approach the beds. The plant is used in an uncooked state, and therefore must be above suspicion.

The cost of making Cress beds is somewhat heavy. To prepare a bed of an acre's extent the outlay would be from £90 to £100. Then the plants would cost another £40—that is, 2 tons of plants at £20 per ton. The wages of the workmen on the Cress beds are above the average of the ordinary agricultural labourer. Cress is grown in considerable quantities still at Springhead in Kent.

Then again the waters, or rather springs, in and about Mapledurwell and Basing in Hampshire are celebrated for their growths of Cress, much of which finds its way to Liverpool—cooled in summer by being packed with ice, protected from frost in winter by coverings

of brown paper. One salesman in Covent Garden sells no Cress except that from this district. In Berkshire we find large beds near the Kennet and Avon Canal. Then, again, 30 acres of Cress are cultivated near Dorking and in Sussex. Mr. Bradbery, the grandson of the original "Springhead" pioneer, is to be found at Rickmansworth. In the basin of the Thames near Staines will be found 22 acres; on the river Gade 42; on the river Bulbarne 41; and so on in the adjacent counties of Bucks, Berks, Hampshire, and Gloucestershire.

The mode of cultivation would take too long to describe in a paper like the present, but where any person is thoroughly interested in the subject, and desirous of utilising any good springs that may exist on land in his possession, we should strongly recommend the purchase and perusal of No. 32, third series, of the "Journal of Royal Agricultural Society of England," where he will find an exhaustive paper on the subject by Mr. W. W. Glenny.

We know a rental of £50 an acre paid by a grower of Watercress and the farmer prosperous!

WORK ON THE HOME FARM.

So far May has been very deficient in sunshine, and though the rainfall has not been heavy there have been several cold drizzly days. Having had a sufficiency of rain in April, we had hoped for a dry warm May; but we have been disappointed.

Pastures grow well, and keeping at present is fairly abundant. Wheats vary much, and look on the whole fairly well, but the forward pieces are not now the best. Hoeing and weeding proceed, and as regards Wheat are nearly concluded, but much remains to be done amongst the Barley. The cold and wet have had a serious effect on the Barley and Oats of the heavier classes of land. Warmer soils have not suffered so much, but on strong or badly drained lands we have not seen Barley show a worse prospect for several years.

Second early Potatoes are coming well through. We have been covering them again for fear of frost, but shall let them come now. The haulm is coming up strong, though the seed was rather small, but it is the condition of the set rather than the size that has most effect on the growth. The soil of the Potato field must never be allowed to rest now until the plants are earthed up. Potatoes revel in freshly moved soil, besides which the constant cultivation kills every weed which might otherwise seriously compete with the intended crop.

Mangold, thanks to the moist season, have come well so far, and only want sunshine to make a most favourable start. They must be side-hoed as soon as they can be seen well. This is most important in a cold season, which checks the Mangold plants, but does not affect the hardy weeds; the latter, therefore, must be eradicated whilst they are small.

Ploughing has been the chief occupation of the horses lately. Fallows have turned up a little wet and heavy. Harrows and roller have been soon brought into requisition, or a single hot day might have baked us many a large brick.

The thrashing machine has been busy of late, for prices have been tempting, and old stacks are hardly to be found. The wind-up has been good; will the commencement after harvest be as favourable?

Butter is now very cheap, and milk being plentiful we are buying calves, as being more profitable than the churn. The vicissitudes of the farmer's life have been exemplified to us by the loss of a cow from milk fever, the first case in twenty-one years.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain.
1898. May.	Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture		
		Dry.	Wet.			Max.	Min.	In Sun	On Grass	
	inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	inchs
Sunday 15	29.849	51.0	49.7	Calm.	51.1	56.9	41.8	90.9	37.6	0.024
Monday 16	30.132	50.1	43.7	N.	50.1	57.9	42.9	108.1	39.9	—
Tuesday 17	30.216	49.0	41.7	N.W.	50.7	59.1	38.1	101.7	34.3	—
Wednesday .. 18	30.230	55.1	48.1	N.E.	50.0	60.1	39.8	109.2	34.9	—
Thursday .. 19	29.918	46.3	45.6	N.	50.3	51.2	39.1	57.8	34.4	0.460
Friday 20	29.728	50.1	49.2	N.	49.9	53.7	46.1	61.2	45.9	0.235
Saturday 21	29.747	53.3	51.9	S.	50.1	60.0	49.6	91.3	49.9	—
	29.974	50.7	47.1		50.3	57.0	42.5	88.6	39.6	0.719

15th.—Rain from 4.30 to 6 A.M., and dull and drizzly after; sunny afternoon, cloudy evening; rain at midnight.

16th.—Brilliant early, and generally sunny, but cloudy at times at midday.

17th.—Sunny early, hazy morning, with cloud at times, and dull afternoon.

18th.—Cloudless early; pleasant sunny day, though cloudy at times.

19th.—Dull, damp morning; steady heavy rain from 1.30 to 7 P.M., and showers after.

20th.—Overcast and gloomy throughout, with almost incessant rain or drizzle.

21st.—Dull and showery early; occasional gleams of sun after 10 A.M.

Rather cooler, with steady rain on 19th and 20th, but not enough to bring the total for the week up to an inch.—G. J. SYMONS.

LOST!

At the TEMPLE SHOW the ORCHIDS exhibited by M. Jules Hye, of Ghent, Belgium, disappeared from the tent on the evening of the last day of the Show.

Any person giving such information to JAMES VEITCH & SONS, Ltd., Chelsea, as will lead to their recovery, will be handsomely rewarded.

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OF

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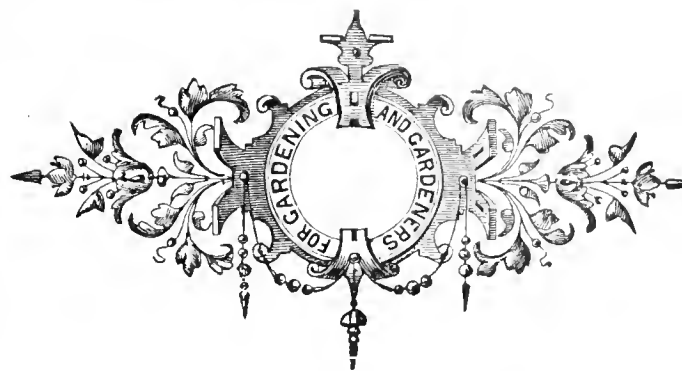
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Journal of Horticulture.

THURSDAY, JUNE 2, 1898.

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IS BRITAIN ADVANCING?

IT has been said that "the wealth, prosperity, and refinement of any nation may be correctly estimated by the quantity of flowers and plants employed in the adornment of its homes and gardens." If this is true—and it appears to be so to me—then, indeed, must Britain have made tremendous strides in prosperity and refinement during the last twenty-five years, for flowers seem now to enter largely into the life of almost every individual. Common species and varieties are cherished by rich and poor alike, but a pronounced feature of present times is that the latter, as well as the former, use every effort in their power to obtain and grow the best varieties of the various species they cultivate. No matter whether it be the modest Daisy or the gorgeous Orchid, as soon as any improved type is distributed there is quickly a "run" on it. To the wealthy a few pounds, or even hundreds, spent in securing something better in plant life than their neighbours is but a trifle scarcely missed, but to the toiler who spends a few shillings or pence in securing an improved form of some favourite flower, it means denying themselves of some other small luxury, or perhaps a necessity.

In country places where wages are low the wage earners can afford to spend little upon favourite flowers, still they manage by "hook or by crook" to grow good varieties of the plants they take a particular fancy to. It is done to a great extent by the exchange of seeds and cuttings, or by the kindness of some encouraging gardener at "the Hall." When judging at village shows it has often surprised me to find how up-to-date the cottagers are in the matter of varieties of plants and flowers which they exhibit. In one instance I well remember a persevering and intelligent labourer, who had long made a speciality of Carnations, set up a beautiful collection of blooms containing many new varieties, of which he had purchased rooted plants direct from a well-known specialist. The squire of the village visited the show, greatly admired the labourer's Carnations, went home discontented to his own garden, and straightway

No. 2592.—VOL. XCVIII., OLD SERIES.

sought out his gardener and wanted to know why he could not have such fine Carnations as he had that day seen at the show. The squire seemed clearly to think it was entirely his gardener's fault that they were not forthcoming. The gardener, whom I knew to be a thoroughly hard-working and good practical man, was obliged to endure in silence, because he had a young and numerous family to consider; but the following will show what chance he had of growing the best types of Carnations. He managed a garden in which the labour during the last ten years had been reduced by two-thirds, yet the whole of the pleasure grounds and kitchen garden were still expected to be kept in presentable style; but here comes the greatest poser, not one penny was allowed to be spent in the purchase of new varieties of plants, or cuttings of them. Small wonder, then, that the squire's Carnations were behind the times.

In the vicinity of large towns the rush after new varieties of popular flowers is still more marked, for those who spend so much of their time toiling in noisy workshops or smoky factories find rest, peace, fascination, in making a hobby of the cultivation of some particular flower during their few leisure hours. What could be better pastime for them, more health-giving, enjoyable, elevating? Some take up the Dahlia, and strive with all their might to come out winners at some local show; others devote their attention to Fuchsias, Pelargoniums, Roses, or Violas; and nearly all dabble in Chrysanthemum growing, even if it is only with a few early varieties in the open air. Earning, as they do, good wages, they ungrudgingly spend a considerable amount in the purchase of things that please them in the floral world. A visit to the flower markets comes as a natural part of their weekly round of shopping. Those who live in the centre of large towns, where they can not enjoy the luxury of a garden, keep their windows regularly supplied with pot plants, or their rooms adorned with a few cut flowers. Indeed, I think it may truly be said that flowers enter to an increasing extent into the lives of almost every individual in Britain, and the very poor will spend a few pence upon them as freely as they do upon life's real necessities.

Does not this all show that there is still a splendid future of prosperity for commercial horticulture, as it points to an ever-increasing demand for the common, as well as the choicer products of the gardener's art? Do not these things also show that Britain is advancing in material prosperity, in taste, in refinement, and in the real comforts of home life enjoyed by the greatest number of the inhabitants?—H. D.

WHAT WILL THE SUMMER BE?

"AN OLD GARDENER" wishes to know (page 444) whether I can tell him how many wet summers we have had during the past twenty or more years? Taking the rainfall records most readily accessible—those of my own neighbourhood—the wet and dry summers of the last forty-two years arrange themselves as follows:—

1856, dry.	1870, dry.	1884, dry.
1857, wet.	1871, average.	1885, dry.
1858, dry.	1872, wet.	1886, dry.
1859, wet.	1873, dry.	1887, dry.
1860, wet, <i>b</i> .	1874, dry.	1888, wet.
1861, average.	1875, wet, <i>a</i> .	1889, dry.
1862, dry.	1876, dry.	1890, wet.
1863, wet.	1877, average.	1891, average.
1864, dry.	1878, wet, <i>a</i> .	1892, wet, <i>a</i> .
1865, wet, <i>a</i> .	1879, wet, <i>b</i> .	1893, dry.
1866, wet, <i>a</i> .	1880, wet, <i>a</i> .	1894, average.
1867, wet.	1881, wet, <i>a</i> .	1895, wet.
1868, dry.	1882, average.	1896, dry.
1869, dry.	1883, dry.	1897, dry.

It will be seen that the wet and dry summers during the period referred to were about equally divided. Out of the seventeen wet seasons there, however, occurred only two in which the total rainfall exceeded the average quantity by 50 per cent., and but seven others when that quantity was exceeded by 25 per cent. The latter are indicated in the above table by the letter *a* and the former by the letter *b*. Moreover, had I time to go into the question more closely, it would no doubt be found that many of the summers classed in the table as wet ones, were by no means injuriously so to vegetation. For it is continuous rainy weather, rather than occasional heavy falls with sunny periods intervening, which produces that coldness of the ground and atmosphere which, after all, makes wet weather at this season so unwelcome in our gardens.

When recently investigating the question of droughts and wet periods occurring during that part of the year when most plants are in active growth, I was surprised to find how much more frequent continuous dry periods had been during the present century as compared with those marked by continued rain.

It is to be hoped that these considerations may afford some consolation to your correspondent, who appears to have such a dread of that comparatively rare experience, a really wet summer.

So far I feel on tolerably safe ground, but when he goes on to ask my opinion as to what the weather of the present summer is likely to be, I must confess myself as much at sea as any other gardener, be he young, old, or of middle age. It is quite true, as "An Old Gardener" says, that wet and dry seasons balance each other sooner or later, but they do so in such an erratic fashion that one never knows how long or how short a time they may take to settle their differences. So that I am afraid but little comfort, or the reverse, as the case may be, can be derived from the fact that dry or stormy weather is at any particular time due.

Judging from his remarks I should say that your correspondent had long been in the habit of keeping his "weather eye" open, and consequently is no doubt able in most cases to form a pretty shrewd guess as to what the weather is likely to be for several hours in advance; or perhaps he may prefer consulting the official forecasts for his own district which are published each day in the newspapers. In either case, it may not appear any great feat in the way of weather forecasting to be able to indicate with more or less certainty the atmospheric conditions likely to prevail during the next twelve or twenty-four hours. Yet, truth to tell, in the present state of our knowledge this is the utmost that we can expect in this country. Indeed, so fickle is our climate that a certain proportion of failures must be looked for even in forecasts covering such a short period of time as a single day, however carefully and skilfully they may have been prepared. I mention this in order that your readers may judge how much reliance is to be placed on those predictions they will meet with from time to time which profess to foretell with confidence the character of coming seasons.

I often doubt if those interested in horticultural pursuits would be much the wiser were we meteorologists able to let them know beforehand the general character of any season, the weather of most summers, for example, being such a strangely unequal mixture of wet and cold, and dry and warm periods. Besides which, as regards the well-being or otherwise of our gardens, so much depends upon the intensity or duration of any phenomenon. For instance, of what advantage is it to know that a certain summer will be hot if in the early part of it there should occur a killing frost, or to learn that another summer will be unusually wet if there be scarcely a drop of rain in June, the previous month having also been singularly dry? But to say nothing of the difficulty of forecasting seasons, I often find it difficult enough to describe the weather of a single month when it is past, at all events in such a way as to render the description intelligible from a gardener's point of view, so frequent have been the chances that have occurred during the course of it.—E. M., *Berkhamsted, May 30th, 1898.*

PICTORIAL GARDENING.

THE picturesque is defined by writers on æsthetics as distinct from the sublime and beautiful by the unconnectedness of its parts. But each separate or individual portion should be characterised either by beauty of form, of which the attributes are symmetry, proportion, and harmony. As the term picturesque is applied usually to landscape scenes, colour, light, and shade must play an important part in all grand pictures. The general effect of such a scene, with its light and shade, will be best judged at a distance, so that a multiplicity of minor details does not confuse the mind. A few days ago I beheld a scene that might well illustrate my remarks on the importance of light and shade.

Standing upon the highway I looked across to the west; before me was an undulating country of several miles of gently sloping green meadows and wooded knolls, in exact proportion. The background was a mountain range with many peaks, but not abrupt or rugged. The shadows of the mountains, the darkness of the trees that had not burst their buds, and the clumps of Pine and Scotch Fir, blended and contrasted with the vivid green of those trees that had assumed their new attire, and made a scene inspiring in its beauty.

Then we may lay it down as a rule that a perfect picture must be characterised by contrast and opposing masses. I have in my mind's eye a beautiful French château standing in about 100 acres of picturesque grounds. As it was situated only just across the English Channel the climate was not materially different from our own, and all the trees and shrubs I shall name are such as are hardy in the northern counties of England. Its walks might have been the origin of Hogarth's line of beauty, they were so gently serpentine and without any acute angles. Its lawns were broad (as all Nature is

broad). No shrubberies bordered its walks; nor were separated from them by narrow verges of turf, as we often see. There were shady walks through groves of deciduous trees, and ancient gnarled Yews overcanopied our paths. The shrubberies, if they may be called such, were not alternated with sombre-hued Conifers. These latter had their positions on the lawns, where their noble proportions might be distinctly seen, and were represented by *Cedrus Libani*, *C. deodara*, *Cupressus macrocarpa*, *Picea Nordmanniana*, *Cryptomeria japonica*, *Juniperus virginiana*, *Thuopsis borealis*, and *Pinus excelsa*. Amongst specimen deciduous trees were *Ailanthus glandulosa* (Tree of Heaven), Tulip Tree (*Liriodendron tulipifera*), *Acacia hispida* (Robinia), *Catalpa syringæfolia*, Scarlet-flowered Chestnut, Pendulous Birch, Weeping Ash, and Weeping Elm. The plantations of forest trees, which had been planted in clumps, were mostly on the outskirts of the grounds, and were composed of Conifers and hard woods.

The shrubs were arranged in masses. In the springtime the eye was gladdened by specimen Rhododendrons, or clumps of the same in distinct colours; spotted varieties were excluded. Masses of Ghent Azalea lent charm to the scene, with their soft and delicate colours. The grassy glades amongst the mighty trees were studded with Narcissi, Snowdrops, Primroses, and Forget-me-nots. Then we would pass a clump composed of English and Persian Lilac and Laburnums. All were given sufficient room for full development. Another clump would be double-flowering Cherry, Siberian Crab, and Almond trees. There were *Forsythia suspensa* (unpruned) and masses of *Pyrus japonica*, each alone. *Magnolia conspicua* was a mountain of snow. The Costorphine Plane and Norway Maple lent a glow of golden light to the scene. *Ribes sanguinea*, Guelder Roses, Mock Orange (*Philadelphus coronarius*), and double-flowering Thorns were here also in groups.

Summer and autumn flowering, or autumn tinted leaves would oppose the groups of spring flowers, and so a picture of colour and diversity of light and shade filled seven months of the year. Amongst the groups of summer and autumn flowers were *Spiræa aræfolia*, *Lindleyana*, *confusa*, *Douglasi*, and *Thunbergi*; *Deutzia crenata* fl.-pl., *Weigela* in variety, *Cornus sanguinea*, and its gold and silver variegated forms; *Hydrangea hortensis*, *H. paniculata*; *Buddleia globosa*; *Berberis stenophylla*, *B. dulcis*, *B. vulgaris*; *Snowy Mespilus*; *Ceanothus azureus*, and *C. Gloire de Versailles*; *Fuchsia Riccartoni*, *F. corallina*; *Escallonia macrantha*, *E. Phillipiana*, and *Arbutus unedo*, beautiful both in flower and fruit.

During the summer the groups of *Acer Negundo variegata*, *Prunus Pissardi*, and Golden Elder, the three mixed in numerous groups, lent a touch of colour and warmth. The golden hued Conifers were in unimixed masses, and included the following varieties, which appear to be the only ones out of numbers of so-called variegated Conifers that are worthy of a place in a collection from the distinctness and brightness of their hues—*Retinospora plumosa aurea*, *R. obtusa aurea*, *Cupressus Lawsoniana lutea*, and *Thuia occidentalis aurea*.

Autumn was resplendent in the glow of colour with Siberian Crab and *Cratægus Crus-galli* in fruit, and leaf tints of green, gold, crimson, and russet. *Cratægus pyracantha* and *C. pyracantha Lelandi*, with their coral berries, and the Mountain Ash, lent its scarlet to the show. The Scarlet Oak (*Quercus coccinea*), Scarlet Maple (*Acer rubrum*), and *Acer colchicum rubrum*, *Rhus*, and *Dimorphanthus mandshuricus*, all added their radiance to the glorious autumn days. As the grounds of this fair place were undulating, and in some parts the slope was sharp and steep, the banks from high to low ground were planted with masses of *Berberis aquifolia*, *B. vulgaris atro-purpurea* (rich crimson, in leafage), *Vincas major* and *minor*, and the golden and silver variegated foliage varieties. *Hypericum calycinum*, *Erica carnea* and *E. herbacea* were beautiful with their pink bells, as were Gorse and Broom; *Juniperus sabina* and *J. communis* also clothed these banks.

A winding stream had planted on its banks clumps of Bamboos, Guelder Roses, red, yellow, and black-twigged Willows; the latter enlivened the banks of the stream in winter with their warmth of colour. All trees and shrubs were unrestrained in growth. There was some pruning, but no contorting with the shears; all groups and masses were irregular in outline, and no exact measured distances had been observed. This was a place without iron or wood palings or tree guards, and there were no so-called rustic arbours or alcoves—it was given up to beauty of Nature alone.

There was no regular flower garden, but around the outskirts of the lawns were large circular beds in which scarlet "Geraniums," flowering Cannas, *Lobelia cardinalis*, *Zinnia elegans*, *Salvia splendens*, *S. coccinea*, *Coleus Verschaffelti*, *Iresines*, and *Alternanthera*, with numerous fine-foliaged sub-tropical plants were placed. *Chamærops Fortunei*, *Chamærops excelsa*, and *Musas* gave brightness and character to the whole. Within this domain was a rockwork. Not such as we often see, a pile of stones placed as if there had been a violent upheaval from the centre of the earth, but a piece of natural rockwork like the sides of an alpine pass, bared in places to show the stone. The crevices that held sufficient soil were planted with *Ajuga reptans*,

Alyssum saxatile, *Antennaria maritima*, *A. tomentosa*, *Arabis alba*, *A. alba variegata*, *Aubrietia græca*, *Campanula pumila*, *C. pumila alba*, *Gentiana acaulis*, blue Hepaticas, *Iberis saxatilis*, *Saxifraga* in variety, *Sedums*, *Vincas*, and *Daphne cneorum*. This rock garden was the face of a natural declivity with a northern aspect, and bounded one side of the sweeping gravel approach to the château.

It may not, perhaps, be possible in lesser places to plant the great variety of trees and shrubs here mentioned, and to plant them in separate groups or in groups composed of three varieties, yet it is possible to give more distinctness to shrubberies, and thereby add to the picturesqueness of a place by planting in groups of threes, fives, or greater numbers than by the all too prevalent dotting and alternating system.

This article would be incomplete without a few words on colour. The hybridist, in his eagerness for new varieties, has sent into commerce in all departments of the garden plants whose flowers are spotty and indistinct, and we should, if we wish to be effective, steer clear of such confusing colours as these. Beauty of colour defined by æsthetical writers is characterised by purity, brightness and softness found only in hues, tints, and shades. The first are those primary colours, red, yellow, and azure, and their secondaries produced in combination, and the tertiaries resulting from the combination of the secondaries. All other colours are either tints or shades. The tints are produced by the admixture of white, and the shades by the addition of black. To attempt analogous harmonies in such a circumscribed space as the petals of a flower is almost absurd; and even in essaying harmonies of contrast with tints of the same colour one should be intense and the other soft, and then the intensity of the one will be heightened, and the softness of the other mellowed.—F. STREET.

LESSONS OF THE SEASONS.

SPRINGTIME, with its trying alternations of clouds and sunshine, heat and cold, scathing nor'easters, soft balmy breezes, rain and drought, brings to the gardener anxiety and encouragement—lessons by the way, which make the sum of that euphonious term, "dear bought experience." And as the years roll by, filling the brief span of time which marks our existence on this earth, we gather wisdom; we are bound to do so if we read, mark, and record the lessons brought to us season by season, applying them subsequently to our practice in furtherance of that striving for success, that steady improvement, which is the end and aim of every earnest intelligent tiller of the soil.

Surely it may be claimed, as a result of experience so gained, that last autumn, when the summer crops were gathered in, we had every bit of bare soil thrown up roughly, in view of as complete a destruction of the larvæ of insect pests as might be, and of that fine deep seed bed in spring, which the action of rain, frost, wind during winter upon soil so exposed renders a certainty. Aye! sure enough have we long ago come to regard autumn as the ending and beginning of the gardening year. The very fact of reaping brings to mind the certainty that seed time will come round again right speedily, for the seasons are so interwoven, have such a mutual influence upon each other, that one tells upon another for good or evil—not altogether, but certainly in no inconsiderable degree, according to how we prepare for it. Let full recognition be accorded to the importance of this work of preparation, to the acquisition of sufficient knowledge to enable us to do all we can, and to grasp the reason why of the matter.

On the evening of the 21st of last September I went to an allotment field to hold a demonstration—an informal open-air lecture in which attention is called to object lessons in the gardens in view of imparting instruction. On these occasions one first of all goes round the gardens, for inspection and a chat with the men as one after another they join in the stroll, and then comes the address. The theme of conversation this time was the frost of a week ago which had cut off the Runner Beans, blackened the Potato haulm, and so brought the season of growth to an abrupt and premature conclusion.

The discussion of this catastrophe brought out the fact that these gardens were so liable to early frost in autumn and late frost in spring, that the crops were always sown late and gathered early. The reason of this was self-evident; the land was heavy and wet; it was equally obvious that the men did not understand how serious an evil this was, or that it was really the cause of the frost. The matter was made plain to them that evening; they were told how vapour was constantly given off by waterlogged soil; how on the night of that fatal frost all the crops were enveloped by a dense mist from this source; how the frost which would cut them off under such conditions would do no harm to similar crops on drier soil. Attention was also called to unmistakable natural indications of the sodden condition of the soil, for there before us were patches of Coltsfoot (*Tussilago Farfara*), and Horse-tail (*Equisetum*), best known in the Midlands as Joint Grass.

Having thus explained the cause of the evil, the remedy was

made equally clear. The surface of the land had an unbroken slope from one side of the allotments to the other; close at hand was the cinder-tip of some blast furnaces, literally a mountain of slag, and there was no provision of water for the gardens. The advice given was to get the water out of the heavy land by drains laid 15 feet apart, make holes of puddled clay at intervals along the lower sides of the allotment as reservoirs for the water, then work into the soil a heavy dressing of fine slag to open it up and impart thorough mechanical division, and there would be perfect water filtration combined with air circulation, warm dry soil, a cessation of abnormally early and late frost, and a supply of water for the gardens in summer.

A large order for the allotment holders certainly, but a perfect remedy, in the application of which I have reason to believe assistance will be given by a kindly generous landlord, rendering this lesson of the seasons fruitful of good, and this particular effort of technical education by the County Council of Derbyshire a memorable one.

—EDWARD LUCKHURST.

THE HISTORY OF THE SOILS OF THE BRITISH ISLES.

(Continued from page 370.)

HAVING thus referred to the most marked and important agencies that have operated in the disruption and dispersal of the ingredients of the crust of the earth, we may next seek for the results, and examine and remark on the various formations either producing or having already contributed to the friable matters that we recognise as soil. We shall deal first with the rock formations and the soils derived immediately from them, which may be styled primitive or natural soil; when these have been noticed *seriatim*, we shall proceed with the various amalgamated soils, such as alluvium and loam.

In its first aspect, we have in granite or crystalline rocks of apparently uncompromising hardness; but the most compact and obdurate rocks, though yielding slowly to atmospheric agencies, decay at last, and their fragments all assist in giving the rocky skeleton of the earth its garment of soil. The accumulation of soil derived directly from the waste of granite rocks (which contain chiefly quartz, feldspar, and mica), though not invariably characterised by fertility, have under certain circumstances an appreciable value. Enriched, it forms the base of a most valuable soil, it is always porous and receptive, and its slow decomposition gives it great permanence as a soil. The products of cultivation of Jersey, in soil derived from crystalline rocks, prove its great value; and, under less favourable circumstances of climate, the granitic soils of Aberdeenshire produce good results both in corn and cattle.

Trap rock, though excessively hard, has, like other compact mineral substances, yielded to the operation of atmospheric and other agencies wherever large surfaces have been exposed. The results of its decomposition are found in a soil of considerable fertility, and the intermixture of its particles with other matters greatly enhances its value.

In their primitive form the soils of the Silurian system are not greatly remarkable for fertility. It is in the collections of matter the various strata contribute to the accumulations peculiar to the system that the best results in soil are found.

In the Devonian system we have the old red sandstone, a formation that affords extensive tracts of rich land in Herefordshire, Shropshire, Moray, and other districts. It affords a soil eminently capable of improvement, and suitable for a great variety of crops. Its horticultural value is considerable, and some of the best results in Vine culture have been obtained from this soil.

The soils produced by the several divisions of the great carboniferous formation are of a very marked and distinct character. The millstone grit, in its extensive development in Northumberland, Yorkshire, and Derbyshire, affords a soil from the disintegrated stone of greater interest and utility to the horticulturist than to the farmer. Distinctly siliceous in character until enriched by decayed vegetable matter it is of the least possible value, and its poverty and generally elevated position have caused large areas to be left in an uncultivated condition. Where thus left we have an illustration of the way in which rocky surfaces are operated upon by organic and inorganic agencies, with the result of producing in course of time the peaty soil so valuable in horticultural practice.

The rocky surface is first covered by the lower forms of vegetable life, mosses and lichens. The former of these plants send their roots into every crevice. Their peculiar structure enables them to absorb and retain water; this assists the moss to dissolve small portions of the rock it has already partially softened. The plant thus creates its own food. The annual growth and decay of mosses, their power of arresting particles borne by winds, and their action on the stone beneath, together contribute to the production of a soil. The process becomes more rapid when *Fungus*, *Carex*, *Heath*, *Vaccinious*, and *Grass* successively appear, with the result of the continued accession of

organic matter, and the constant softening of rocky surface acted upon by the plants. As the soil deepens a still higher class of plant or plants of a more nutritious character appear; and when these are followed by the introduction of cattle the land is still further enriched, and at length becomes of some value to the forester and farmer. In the depressions of surfaces and hollows of this formation, where water rests, great accumulations of boggy soil are found. This is greatly due to the growth and decay of water-loving Mosses, such as sphagnum; but the unctuous black bog soil thus formed is not suitable for plants, although by desiccation and exposure it serves certain purposes.

The varied character of the soil of the coal measures is naturally due to the particular rocks or clays which have a surface development. When the laminated clays of the system are uppermost, the result of atmospheric action, wood, and cultivation, produce a thin soil better adapted for grazing land than gardening; and the aspect of the rolling or sometimes boldly undulating face of the country, beneath which lie so much mineral wealth, is often cheerless; where great rifts or profound valleys are found in the formation, exposing the strata derived from the waste of granitic, Silurian, and old red sandstone formations, the commingled matters washed out by streams and deposited by their action in neighbouring valleys, form loams of the greatest possible value to the gardener; but these will be described more fully when we treat of those deposits.

The mountain limestone, which, by its extensive development, is one of the important as well as the most marked in character of any divisions of the system to which it belongs, possesses in itself that great element of fertility, lime, enriched by the presence of the fossils which contribute to its production. It is found crowning the hills of Yorkshire, Derbyshire, and Westmoreland, and its hard and durable texture better resists the wasting action of the element. The soils resting immediately upon it are necessarily calcareous, and somewhat shallow, and support a marked and characteristic flora—Pines, Firs, and deciduous forest trees generally thrive, and, with preparation, good fruit tree soils are produced. The formation of soil from such rock is largely mechanical: the roots of the trees, now covering extensive tracts, penetrate every crevice, and at length break up and dislocate the rocky crust. Frost and snow, rain and drought, are factors of varying importance, according to exposure, and all these agencies are working with the same result, and tend to the increase of soil on the surface of the rock.

The notice of the soils of the carboniferous system would be incomplete without reference to the sandstones, which form part of the coal measures, and which, in some instances, are presented on the surface, and, like the other parts of the formation, give, by the decay or disintegration, a soil of less marked character than either grit or limestone, but intermediate in value between them. Sandstones, grits, magnesian limestone, and gypseous marls characterise the Permian system, and give some very distinct primitive soils. The rocky divisions of the formation each afford soils by the decomposition of their exposed surfaces, and these naturally partake of the mineral character of the stone from which they are derived. The soils from the pure sandstone are poor, shallow, supporting naturally a meagre vegetation. The grits are equally poor, but more strongly siliceous. The limestone has produced a soil of a somewhat superior character, atmospheric action having removed the lime, and neutralised the obnoxious products of the stone exposed to its influence. The marls are usually tenacious, and the sulphate of lime derived from the gypseous deposits with which the marl is associated gives a distinct character, and certain elements of fertility under tillage.

The trias comprising the keuper, the bunter, and the new red sandstone present in two of its important divisions some general characteristics in texture, colour, and mineral constituents; but in the bunter, as exposed in Sherwood Forest and Cannock Chase, there is a marked difference. In the first named there is found both in the compact marls accumulations, and in the sandstone a certain amount of sulphate of lime. The exposure and consequent disintegration of the saliferous and gypseous shales have given their own peculiar character to the resulting soils. Occupying generally a good mean elevation, and often assuming a boldly undulating character, the marls and sandstones of the trias afford a valuable series of soils, on the former of which orchard fruits may be cultivated with marked success. The lighter soils of the sandstones are of less value, but useful for special gardening purposes. The bunter conglomerate is not invariably found, as its name implies; in a fixed and consolidated condition; its superficial exposure exhibits a pure sandy soil, intermixed with small water-worn pebbles; its purity is proved by the excellence of the water spring filtered through it; a soil that has no marked chemical properties is nevertheless of great value to horticulturists; it is a base for whatever additions are needed. In its pristine state it is suitable for Heaths, and with additions of vegetable soil *Camellias* thrive in a compost of which it forms the greater part.

—PERCY T. INGRAM.

(To be continued.)



LÆLIO-CATTLEYA WELLSIANA LANGLEYENSIS.

THIS is the third bigeneric hybrid that Messrs. J. Veitch & Sons have introduced from a cross between *Lælia purpurata* and *Cattleya Trianae*. The first was *L.-C. Wellsiana*, the second *L.-C. Wellsiana albida*, while the third, which is depicted in the illustration (fig. 86), has the above distinctive title. It is certainly the finest of the trio, as was observed in the Chelsea nursery recently, the flowers being not only larger but more substantial and much richer in colour, throughout all the parts. The broad, handsome petals are rich rose flushed with purple, the sepals being a delicate blush. The splendid lip is velvety purplish maroon, deepening towards the throat, which is yellow with rose at the base. When the plant was exhibited at the Drill Hall, on April 26th, the Orchid Committee of the Royal Horticultural Society accorded to it a first-class certificate.

ONCIDIUM LOXENSE.

ALL the *Oncidium*s with long scandent scapes of flowers are beautiful, but not many are more so than this rare species, which is now in flower. The plants, when strong, produce spikes a couple of yards or more in length and many-flowered, the individual flowers about 3 inches across. The sepals and petals are brown, with yellowish markings showing through as it were, but the golden orange tint seen on the incurved lip is really beautiful. Its culture is similar to that recommended for *O. macranthum*, and it comes from Loxa in Ecuador.

DENDROBIUM CUCULLATUM.

This is now in flower, and although it is distinct from *D. Pierardi* it is questionable if it deserves specific rank. The flowers are very freely produced, and highly attractive if the plants can be suspended in front of a wall of greenery of some kind, or Maidenhair Fern. They have an almost semi-transparent character, and are beautiful in the mass. It is an easily cultivated though not particularly strong-growing plant, and thrives under the conditions advised for the long bulbed deciduous *Dendrobium*s generally. Its pendant habit especially fits it for basket culture.

ONCIDIUM LURIDUM.

If we except *O. Lanceanum*, the ebulbous species of *Oncidium* do not seem to be at all popular, yet many of them are very interesting and beautiful. The above, for instance, is one of the finest of the West Indian species, yet it is seldom seen under cultivation. It is interesting as one of the Orchids known to Linnæus, and the great botanist placed it, in common with all the exotic Orchids he knew, into the genus *Epidendrum*. The flower spikes spring from the base of the leaves, the latter being upwards of a foot in length, slightly spotted in most varieties.

The scapes often grow 4 feet or 5 feet long, and carry a large number of blossoms, these in the type being reddish brown, with a few yellow bar-like markings. It is, however, a very variable kind, so cannot be determined by colour alone. It may be grown in

medium sized pots nearly filled with drainage, three parts of sphagnum moss being used to one of peat fibre, and plenty of rough opening material. Though there are no pseudo-bulbs, the large fleshy or leathery leaves store a lot of nutriment; and though not requiring to be actually dried off in winter, much less moisture is then needed than in the growing season.—H. R. R.

A BRITON IN BELGIUM.

(Continued from page 387.)

IT is not necessary to get half so far out of Antwerp as Ghent, to see good gardening. Nor is it necessary to get more than two

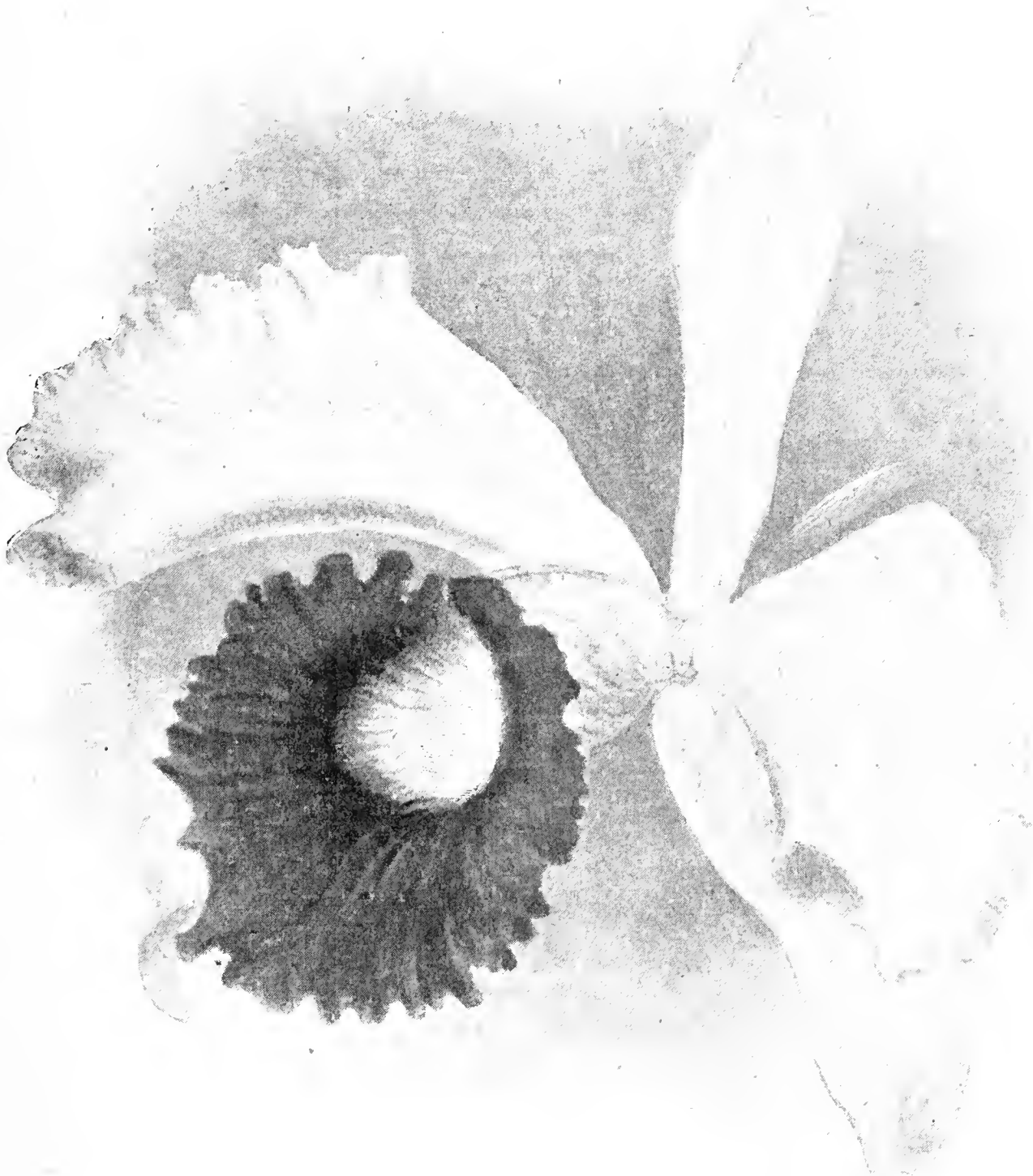


FIG 86.—LÆLIO CATTLEYA WELLSIANA LANGLEYENSIS.

or three miles out of the suburbs to find at least one beautiful and remarkable garden. When a man starts to learn a bicycle at eighty years of age, depend upon it there is something in him vastly out of the common. Well, there is such a man, and he is the same whose name has become famous among lovers of hardy plants as the builder of one of the most wonderful rockeries in Europe. Those who are fortunate enough to see the garden and enjoy the hospitality of M. and Mme. Everaerts, of Vieux-Dieu, near Antwerp, will long remember the experience. The rock garden is a monument of loving industry. With its many ramifications, its banks and recesses, its peaks and valleys, its slopes and summits, a calculation as to area is completely baffled; but many and many a square rod of rooting space, many and many a ton of stones, are represented in the great work. It is the labour of a lifetime, the hobby of a busy man of the world, whose brief hours of leisure have known one great desire. And it is still going on. At eighty-two the veteran builder rises with the dawn, draws from his piles of stones and works on. He talks, with a perennial faith and

composure, of the extensions that are to be made. He speaks of the pleasant past, of the hopeful future.

On these garden Alps flowers of nearly every genus bloom. As far as may be, the conditions of existence of every species in its mountain home are copied. There is more than the plain features of display and adornment; there is an intimate study of the requirements of the plants for their own sake. It is as though the grower did not strive to snatch from the plant its beauty, but to set on it the crown of its own health and contentment. If this be so—and it was the impression which I for one gathered strongly—it suggests a love for Nature which must inevitably sweeten life's thorny pathway to a degree which selfish culture can never attain. The beautiful mass of *Eritrichium nanum*, with its azure lake of sunny blossom, the soft cushion of silvery Saxifrage on the grey promontory, are not simply to be spoken of as gay lumps of carbon pressed into the service of mankind, but as objects of solicitude and care, of affection, I might almost say of reverence. There is a new and appealing beauty in this view of gardening. It is the unwritten poetry of flower culture.

To mention half the beautiful plants on the Antwerp Alps would be to draw up something like a catalogue, and as I have a rooted dislike to note-taking, which awakens reminiscences of feverish work in stuffy tents in past years, when yard-long reports were being prepared for waiting presses, I resort to it only as a last extremity. Far sweeter is it to drink in the pleasure of a garden like this in such draughts as Nature gives, and through her own media. The interposition of paper and pencil would be appropriate only in the hands of an artist, who could pourtray natural beauty as only those wonderful Dutch and Flemish painters have been able to do. It may be said that through note-taking comes information. True, but not inspiration. And it is through inspiration rather than through abstract learning that there comes capacity for putting into force, either in gardens or on canvas, those mysterious impulses of genius which have made the little kingdoms of the Low Countries such vast powers in civilised life.

Thus it is that I am no more going to make an attempt to describe the materials with which M. and Madame Everaerts have built up their unique and beautiful garden than to indicate the separate colours employed by Rubens and Rembrandt, Hobbema and Van Dyck, Van der Neer and Wouwerman, or other great artists of the Dutch and Flemish school. Antwerp throws open its beautiful art galleries free to the world, and I have very strangely misread the disposition of the hospitable pair mentioned above if they would decline to permit any traveller animated by a pure love of horticulture to see the work which they have done. The visitor does not see merely one of the most astonishing and remarkable rock gardens of Europe, but groves of beautiful trees and shrubs, naturalised wherever possible, including small forests of Rhododendrons, snowy mounds of Andromedas, and huge old clumps of Magnolias, studded with bloom. He finds colonies of plants, colonies of trees, colonies of birds, and even colonies of fish, the last giving a chronometer-like touch to Nature by the accuracy with which they assemble at the pond edges when the hour has arrived to expect the master and mistress with the early morning meal.

There will be seen, too, beautiful borders of hardy herbaceous plants, extending in the aggregate to half a mile long or more, and full of choice flowers; an extensive Rose garden, comprising all classes of plants and long lists of varieties; a large collection of hardy fruits, carefully grown and pruned; houses of Strawberries; houses of Roses; houses of this plant and that plant and the other—in fact, every item of a great private horticultural establishment, where everything that is thought worth growing is thought worthy of being grown well. When the head gardener appeared on the scene he proved to be what might have been anticipated—an intelligent, active, earnest man. In connection with him I had a pleasant surprise. The Belgian spoke English much better than the Briton did French, and he—the Belgian—had learned our tongue under the encouragement of his employers for the express purpose of reading our gardening papers. If the editorial blue pencil has become at all impatient over these jottings, I am sure it will learn composure at the news that the practical articles in the Journal are closely scanned every week, and the hints given put freely into practice.

Having the blue pencil still before my eyes, in spite of a triumphant sense of having momentarily disarmed it, I refrain from making this pleasant little tribute to British horticultural journalism the text for a homily on gardeners' education. Warily, too, must I tread in a comparison of the readiness with which the Belgian gardener brought out his note-book at the mention of any new name, and the caution, almost amounting to suspicion, with which a new thing is often greeted here in Great Britain, lest I draw sarcastic charges from indignant horticulturists that I am younger than I ought to be.

Humbly acknowledging this damaging trait of mine, I still venture to mention a forcing Strawberry which struck me as good; it was being grown by hundreds, I might also say by thousands, and appeared to be remarkably free. While the Briton was making a mental note of the name (it is called Vilmorin's) the Belgian was putting into the ever-ready note-book the name of Royal Sovereign, which will speedily have to undergo a test of superiority with the French sort.

Speaking of Strawberries reminds me of an allusion by Madame Everaerts to a variety grown years ago in her ancestral home near Aix-la-Chapelle, which had many distinctive qualities. It was a fruit of good size, very dark in colour, in fact almost black, and having so powerful an aroma that a few fruits of it would perfume a whole basket of another sort. Its other most notable feature was a negative one—great sparsity of fruiting. All qualities, good and bad, are mentioned, because they are characteristic of the sort, and may help to identify it. If any Strawberry specialist recognises the variety let him send the name along for publication. It was much prized by the lady of the house, but unhappily, owing to its being a poor fruiter, it fell under the ban of a former gardener, who promptly threw it away. This particular gardener is spoken of with a certain mingling of awe, wonder, and admiration. Only equal to his sublime knowledge of every branch of gardening was the sublime calmness with which he denied the most rudimentary knowledge of the art to his employers. Do you imitate my own thoughtless act, and inquire his nationality? Then the truth must out, though thrones may totter and dynasties collapse. He was a Briton, too!

After this blow to the national pride it would gratify me to pass on to something comforting. Well, I found it—for myself—but can only transmit it in the form of a hint. Hundreds of acres of land around Brussels are devoted to the culture of a vegetable which is rarely seen here except in large country gardens. I allude to Witloef. That it is grown by us to a limited extent I happen to have the best means of knowing—namely, concurrence in the distribution of seed. But the almost complete absence of the vegetable from our markets, and the rarity with which it is included in menu cards, tell their own story. Now, Witloef étuvé, that is, Witloef boiled, then browned in a saucepan and served with sauce, is an exceedingly tender and wholesome vegetable. It is as melting as Seakale, but the flavour, otherwise somewhat similar, has a bitter reaction reminiscent of Turnip tops, so that you lose your Seakale comparison all in a hurry. Those whose palate is robust enough to appreciate an occasional dish of Turnip tops would soon become very fond of Witloef. Nothing could be much simpler than the way in which the Belgians secure a spring supply. They grow the roots in deep and well-pulverised soil, lift them in autumn, trim off the tops, replant, and cover thickly with straw. The price this April was about 4d. per lb.—W. PEA.

(To be concluded.)

LATE GARDEN TULIPS.

It is no disparagement to the English florists' Tulips to say that they are better suited for cultivation in a bed, properly protected and shaded, than for undergoing the vicissitudes of growing among border flowers. For this purpose there is nothing finer than the Tulips with self or almost self-coloured blooms. A very beautiful gathering of nine different flowers, sent me by Mr. Wm. B. Hartland, is before me now. Some of these I grow, but as there are others I have not had, it may be more convenient to take them as they are. Very brilliant is *T. fulgens lutea*, with long, rather narrow, petals of the brightest yellow. Fine, too, is *elegans lutea*, bright yellow, flushed with orange red, of pretty form and large in size. A pretty form of *T. Billietiana*, a variable species, has rather paler yellow, shorter, and rounder-petalled flowers, strongly marked with carmine. *T. ixioides* is a charming yellow flower, but with black spots at the base of the interior, and with black anthers. Two exquisitely delicately coloured flowers are *T. Leghorn Bonnet* and *T. flava*. I presume the name Leghorn Bonnet is taken from the pale straw colour of the flower. *T. flava* is of much the same shade, but whiter towards the base and round the margins of the flowers. Bridesmaid is a Tulip with dark crimson ground, resembling the old double Pæony, but feathered broadly with white. It is very large. The Moor is a deep brownish red. One bearing the awkward name of *T. Gesneriana* major *rosea cœrulea* is deep rose red, with blue at the base. I have had this for years under the same name, with the exception of "rosea." *Gesnera aurantia maculata* is magnificent in its colouring, and one despairs of trying to describe the combination of rose, orange, and yellow, with the intermediate tints of shading it possesses. Such flowers as these are more brilliant than the Darwin Tulips, and are more elegant among other flowers by reason of their less formally shaped blooms.—S. ARNOTT.

[We wonder if our closely observant correspondent has been impressed by the fragrance of the brilliant *T. macrospila*. It was obtained from Messrs. Barr, and is a general favourite.]

HARMFUL AND HARMLESS GARDEN MOTHS—21.

YEARS ago, when the Crystal Palace was not built, and people on the South of London visited the old Beulah Spa as a health resort, the vicinity of Norwood abounded with those black wooden fences which are the delight of moths, also of entomologists. For these fences were often then the temporary abiding place of choice species, both of moths and beetles, which had bred in the gardens thereabout, or in the woods, which were still extensive fifty years ago. A worthy friend of mine made many a search along these palings, seeking the silvery arches, or *Aplecta tinctoria*, and was rewarded with a few. It is a moth not common in Surrey nor in other counties, but the caterpillar lived on some of the Birches which adorned the Norwood hills. It is one singular in appearance, the body being marked with depressed rings, its general colour brown, upon which are numerous tiny spots of black and white; it hibernates, becoming adult during May.

The moth is certainly one of the prettiest of our Noctuas, though the colours are not conspicuous, the surface being glossy grey, with bands or lines of silvery brown. June and July are its months of emergence. Not an injurious species, but its relative, the grey arches, a more abundant moth (*A. nebulosa*), may, in caterpillar form, commit some damage during the spring, for this insect, living at first upon low plants, afterwards ascends trees, eating the buds and young leaves of several ornamental species. It is brown above and pale beneath, dotted with black, and having behind the head a horny plate. In May it enters the earth, the moth emerging in about a month, when it is fond of resting by day on walls or fences. On examining one we shall find it whitish grey, or some darker shade, exhibiting those marblings and wavy lines which are characteristic of the group.

At the end of May, or early in June, the dark brocade moth (*Hadena adusta*) deposits eggs upon various garden plants. It is a dull-coloured insect, the bar and patches being not much darker than the general brown of the wings. The caterpillar is yellowish green, sometimes tinged with pink, faintly striped; on the sides are black and white spots. After feeding on low plants during the summer it often resorts to Sallow in September, and devours the flower buds of the next season, then returns again to the herbage near, usually entering the earth in October to become a chrysalis. Still better known is the caterpillar of the pot-herb moth, so-called by gardeners, but which entomologists have named the brown line, bright eye, or *H. oleracea*. Of recent years we have had fewer reports about the destructiveness of this insect. It is perhaps not identified at times amongst its many brethren that pursue the method, of hiding by day just under the soil, doing mischief to roots, then at dusk emerging to attack stems and leaves. This has been taken on Cabbages, Broccoli, Lettuce, and no doubt will occasionally help to clear off Docks or kindred weeds. The moth is brown, showing a line of white like the letter W, and a blotch deeper in hue than the ground colour. Usually the caterpillar is pale green, striped with brown and yellow; between the stripes are rows of black dots. It feeds during the autumn months.

At that season, too, occurs the caterpillar of the broom moth (*H. Pisi*), which I have had brought to me now and then as a curiosity, from one or other of the London suburbs; it is also found in many other places. This is a beautifully marked caterpillar, the stripes being green and yellow; between these are narrow lines of white and black. Though the English name associates it with Broom, I have mostly taken it off the common Brake Fern. The Latin name is appropriate, for the moth sometimes visits gardens, laying eggs upon Peas and Beans; but so conspicuous a caterpillar can be easily removed. The moth is generally on the wing before midsummer; it is reddish-brown, faintly marked.

We may consider the nutmeg (*Hadena Chenopodii*) to be rather a useful moth. It is one of the many species that come in July to flowers after sunset; a grey-brown insect, obscurely mottled, having three pale lines crossing the wings. It is not, however, by any means so common as the caterpillar, which either suffers from ichneumon foci, or else often falls a prey to birds. Possibly they are attracted to it by its conspicuous colours, for it is a pretty caterpillar, though of moderate size. The green body has netted markings of black, its sides show white spots, and four pink stripes run from head to tail. In August it is mostly observable, feeding upon the *Chenopodiums* or Goosefoots, which are frequently abundant upon waste ground and about neglected gardens. Should there appear a specimen that we recognise of a companion moth, called the dog's-tooth (*H. suasa*), we give it a welcome, for the caterpillar is a devourer of the Knotgrass, feeding by night, and resting during the daytime in the sphinx attitude, the front segments raised and curved, while it holds on tightly by the hinder ones. Like some other of the *Noctua* tribe, the colour is variable, green or brown, but it always shows a yellow stripe along each side, edged with black. July and August are its months of feeding; the moth emerges early next summer, and is

named from some wedge-shaped markings of dark brown, which point towards the base of the wing.

One of the first Noctuas to appear in spring is the early grey (*Xylocampa lithorhiza*), which comes out defying the gales and showers of March. When fresh from the chrysalis this moth has a beautiful rosy tint, which soon vanishes. Its plumage is rather downy, appropriate to a species exposed to our spring, greyish, with tracings of dark brown and some black spots. The females resort to Honeysuckle in gardens or woods. Young caterpillars emerge from the eggs during June, and, as they grow, become noticeable on the slender stems of their food-plant, sitting with the head stretched out, while the legs hold tightly, but they drop if alarmed, forming a ring. Towards the tail its body is narrower, in colour greyish-brown, and a pale stripe extends along the back. Early, too, is the much larger and conspicuous sword-grass moth (*Calocampa exoleta*) which, however, makes its appearance first in October, haunting Ivy bloom, or late garden flowers at night, then before long hibernates. The wings are pale grey, having a few dark lines; the discoidal spots are very distinct, and contain light centres. In colour the caterpillar surpasses the moth. It is velvety green; on each side are two stripes; one of these is yellow, and has above it a row of black and white spots; below this is another stripe of brilliant scarlet, bordered with white, the legs reddish-green. Commonly it feeds from May to July on the creeping Field Thistle, also sometimes on the Scabious species and the Bladder Campion.

We come next to the shark moths; not as caterpillars do they exhibit quite the ravenous nature of the fish, but are still somewhat voracious eaters of leaves, especially from their often occurring in companies. The shark (*Cucullia umbratica*) type of the group, is frequently observed resting on walls, or on those grey park palings, which it exactly resembles in colour, about the middle of June. Like the other sharks, it has narrow wings, which have a few black lines on the general grey, and the thorax is crested. Some seasons the caterpillar does notable injury to the garden Lettuce, secreting itself amongst the lower leaves that lie on the ground or are curled over. Occasionally it lives upon Sow Thistles, which is some set-off to the mischief it does. The body of the caterpillar is dark brown, or nearly black, crossed by pale shagreened markings, and two segments have several orange spots. It feeds in July and August. Some years ago a gardener brought me China Asters which had been attacked by the caterpillar of the Starwort (*C. Asteris*). It is found also in woods feeding upon that plant and the Golden Rod. This has a long slim body which is green striped with blue and yellow. It goes underground during September, and the moth emerges in June. Another of these sharks is called the mullein moth (*C. Verbasci*). It has rich umber-brown wings, a band of light brown, and two pale crescents; it usually appears during May. The caterpillars are stout and showy, feeding in parties, the general colour whitish green, on which are yellow and black spots; they are partial to the hoary and other Mulleins.—ENTOMOLOGIST.

THE CULTIVATION OF WALLFLOWERS.

BEDS of Wallflowers, either mixed varieties or separate colours, are so showy and sweet-scented at this season that few persons would care to dispense with them altogether from their collection of spring flowers. Dwarf, bushy, well-grown Wallflowers are excellent plants for furnishing beds and borders in winter, and for this reason, apart from their wealth of fragrant flowers, they command considerable attention. Good, bushy examples, however, will not be forthcoming in autumn if seed is not sown at once. Choose a piece of moist, fertile soil, that has been dug and manured some time previously. An open border on a north or east aspect is, perhaps, the best, but they will succeed on a hot south or west aspect unless the soil should be shallow and poor.

In preparing to sow the seeds break down lumpy particles and remove large stones, bringing the surface to a fine tilth. Make perfectly level with the aid of a rake. If the soil is very dry it is not desirable to sow the seed before giving it a copious moistening through a fine-rosed can. Moisture is very essential to cause germination. Scatter the seed, not necessarily scantily, but evenly, so that the seedlings do not come up in crowded patches. Seed may be sown in drills, but the broadcasting method is superior. A quantity of fine soil ought to be at hand for the purpose of spreading over the seed and hiding it from sight. Dust dry soil is as good as moist for covering the seed when the soil was previously watered. It will prevent the moisture escaping.

Under favourable conditions the seeds will quickly germinate. To assist the seedlings in advancing vigorously they must be watered occasionally in the course of very dry periods. They will not require daily waterings. In July preparation must be made to prick out the seedlings in order that they may strengthen and become the bushy plants wanted. Dig over a piece of ground in an open position. Providing it is not very poor and shallow no addition in the form of manure or leaf soil is required, any excess of organic matter being liable to produce a strong succulent growth.

Transplant the young plants in rows 6 or 8 inches apart. I find it a ready method to take out a trench with a spade, laying the plants

on the face of the trench about 4 inches asunder. Cover in a portion of the soil over the roots, making it firm, and apply a soaking of water, then fill up with the remaining soil. Treat each row in the same way. Little, if any, water will be required afterwards. Of course transplanting may be effected with a trowel if the soil is sufficiently moist, as new rootlets will soon form therein. The only culture required is to keep down weeds, stirring also the soil several times until the plants have advanced so that this will be impossible.

The result of transplanting is to give a fresh impetus to the production of fibrous roots, and as each plant is favoured with room to develop, side shoots extend, forming in due course the compact bushy plants sought for. Such move easily in autumn for planting in permanent situations in beds, borders, vases, and window boxes.

For general purposes it is best to sow a packet of seed containing a mixture of all the best single varieties. The market variety is the blood red or dark brown. Sutton's Dwarf Bedding varieties are remarkable for their dwarf compact habit, growing about 6 inches high, colours brown and yellow. For an early display of Wallflowers through the autumn and winter, Sutton's Earliest of All is the best variety I have tried. The colour is yellow.

Double Wallflowers are more ornamental than useful, and if these are cultivated seed of a good reliable strain of double German ought to be procured. Plants from such strains are invariably dwarf and compact in habit, and produce fine spikes about a foot in length well furnished with flowers of a Balsam-like character, sweet-scented, and of various shades of colour. Give the plants moderately rich soil in an open position, affording slight support to the spikes as they come into bloom.—E. D. S.



WEATHER IN LONDON.—Holiday keepers can congratulate themselves on having had comparatively fine weather for Whitsuntide. Though it was dull and threatening at times, no more than light showers fell in the metropolis between Thursday and Whit-Monday evening, when rain fell steadily, while at frequent intervals the sun shone pleasantly. On Tuesday it was wet almost the whole of the day, but Wednesday opened brilliantly, but heavy rain fell later.

WEATHER IN THE NORTH.—Rain, which fell sparingly on Tuesday morning, was beginning to be much wished for after a week of rather ungenial weather. Several of the nights were decidedly frosty, and for several days a strong drought, with bright sunshine and cold high winds, prevailed. Rumours of considerable damage to bush and other fruits are heard.—B. D., *S. Perthshire*.

ADONIS VERNALIS.—It is doubtful if there is a more interesting or showy hardy plant in blossom on the rockery or in the herbaceous border in April, yet how seldom do we see the plant at all in an ordinary garden. One would imagine, from its apparent scarcity, that it was new, whereas it was introduced as far back as the year 1629. Although it will succeed in the herbaceous border, its proper place appears to be in a fissure between two pieces of rock, where it can obtain a deep rooting space, deriving the necessary amount of moisture without stagnation. Propagation is effected by division of the roots, but it is not advisable to interfere more with the plant than is absolutely necessary, as it does not increase in bulk rapidly, although it will flower freely annually. When in bud the back of each petal exhibits a dark-coloured patch, which is not discernible when the flowers are fully expanded. It is the lustre of colour that renders this so charming a plant for the hardy garden.—E. M.

RADISHES.—There was at the Temple Show a remarkable display of Radishes, but in so many cases were the roots quite past eating value, and too large. There is an almost interminable variety now in commerce, early and late, olive, round, and tapering, red, white, carmine, purple, and white-tipped, short-tipped, and long-tipped, all very nice in their season if pulled when quite young, but if not, then absolutely worthless. These roots when shown in this way should be set up only when just fit to eat, and then alone. If past the crisp stage they should be left at home. It is because pulled so large that we rarely get in the market at this time of the year really good edible Radishes. Then how few varieties is it needful to grow. The first Early Olive, white and red, the pretty white-tipped French Breakfast, the good Turnip-rooted red and white, and finally, if desired, Wood's Frame or the Long Red. These varieties satisfy most ordinary requirements in private gardens.—OBSERVER.

SERIOUS LOSS OF ORCHIDS FROM THE TEMPLE SHOW.—We are informed that at the Temple Show Mons. Jules Hye of Ghent lost the very valuable Orchids he exhibited, and no trace can be ascertained of their whereabouts. They were seen by him in the tent soon after 9 P.M. on the Friday, but they had disappeared by ten o'clock, and he is naturally in great distress. We understand that a reward will be paid for their recovery.

TEMPLE SHOW AWARDS.—In the list of medals and cups that were awarded to exhibitors at this show, we omitted to state that Messrs. R. Wallace & Co., Colchester, received a silver-gilt Banksian medal for their beautiful collection of hardy flowers.

ASPARAGUS AT THE TEMPLE SHOW.—As a reader of your Journal for a number of years, I must ask you to correct an error of your reference to Asparagus at the Temple Gardens. The large bundle you refer to as Castle Ashby produce was exhibited by me, and I was awarded a silver medal for the same. If you refer to your Journal of 1894, June 13th, you will find you described my exhibits of Asparagus as splendid, and such as were seldom seen.—WALTER GODFREY, *Colchester*. [We have more than once or twice admired the splendid produce of Mr. Godfrey, and thank him for his note. Our only desire is to be correct.]

BROCCOLIS AT THE TEMPLE.—When anyone is engaged in the work of reporting such a show as was that at the Temple last week, he has in the rush little time to reflect or talk; but during the second day a leisurely look round enables the reporter to see and note many things that the first day in the hurry could not be dwelt upon. Thus it was, that looking over the collections of vegetables I overheard the remark, "The Broccolis all have different names, yet they are all just alike." That remark induced me to look over these Broccolis rather more carefully, and I found nine diverse names, yet there were hardly more than two varieties, Late Queen and Model, shown. How much easier to thus manufacture names than real varieties. The Council of the R.H.S. is prompt to exclude from hardy cut flowers any duplicate bunches; it is much more tolerant with vegetables, some things coming in collections over and over again. Let us have these collections of vegetables and fruit also by all means, but let everything be shown under their true names, and then only of the finest quality.—OBSERVER.

ROYAL GARDENERS' ORPHAN FUND.—A meeting was held on May 26th, when the following special receipts were reported—viz., his Grace the Duke of Rutland per Mr. Divers £5; Sir R. Hargreaves Rogers, £5 5s.; the Hugh Low Cricket Club, sale of bats and balls, £3 7s.; Mr. Witty, Nunhead Cemetery, box in show houses, £1 15s. 6d.; Francis Robinson, £1; proceeds sale of gold ring received from an "Anonymous Lover of Flowers," £1 6s.

BECKENHAM HORTICULTURAL SOCIETY.—We have received the schedule of the summer show of this active society, which is advertised to take place on July 27th. It is a good and comprehensive schedule, with classes for almost everything in season, and fifty-nine of these classes "open to all." There are others for amateurs, cottagers, and children, the whole numbering 114; a diversified display may therefore be expected in the Recreation Grounds on the date named.

THE NATIONAL CO-OPERATIVE FLOWER SHOW.—The new schedule of this annual show has just been issued. The prices are again increased, and amount to over £350 in cash, besides medals, framed certificates, and other awards. The Agricultural and Horticultural Association contributes over £200 to the prize list, and the Crystal Palace Company £150. The show is fixed to be held on Friday, the 19th, and Saturday, the 20th of August, at the Crystal Palace, concurrently with the Great National Co-operative Festival. Mr. G. Waugh again acts as Hon. Director of the Show, and Mr. E. O. Greening as Hon. Secretary. Copies of the schedule may be obtained free of charge on application to the Hon. Secretary, at 3, Agar Street, Charing Cross, W.C.

LAXTON'S LEADER STRAWBERRY FOR FORCING.—Royal Sovereign is known as a general favourite for forcing, and well deserves its reputation. Laxton's Leader, a newer Strawberry, has been forced here under exactly the same treatment, and side by side with Royal Sovereign has come in ten days earlier, producing larger fruits and of better flavour, many of the fruits exceeding an ounce each in weight. President follows, but has not the clean, healthy habit of either of the above varieties; it is, moreover, subject to mildew, and the fruits are smaller, yet its flavour is superior to them both.—JOHN WALKER, *Fairfield Gardens, Cobham*.

— **BROCCOLI.**—Sutton's Large Protecting is one of the best of Broccoli for spring use. A glance at the plants growing in May would lead one to think they were so many Cabbages, as the heads first form in that way. A close inspection, however, reveals charming white heads carefully protected by several leaf coverings, which render the heads of unusual purity in colour.—E. MOLYNEUX.

— **MARROWFAT PEAS.**—At the Temple Show the exhibit of Messrs Sutton's new Marrowfat Peas caused quite a sensation. As noted in our list of awards last week it received the highest honours in the vegetable division from the judges, and subsequently two large baskets of the Peas (Sutton's Early Giant) were by command of the Prince of Wales sent to Marlborough House in time to be served at the Derby dinner given by his Royal Highness.

— **PRESENTATION TO MR. J. GRAY.**—Mr. Gray having resigned his position of head gardener to Sir George Meyrick, Bart., Bodorgan, the under gardeners took the occasion to present to him before leaving a case of handsome carvers, bearing the following inscription:—"Presented to Mr. J. Gray as a token of respect by the assistant gardeners of Bodorgan, upon his leaving the charge of Bodorgan Gardens, Anglesea, North Wales, May, 1898." Those who have visited these gardens will know how much they have been improved whilst under the charge of Mr. Gray, whose departure from the district was much regretted by all.

— **COLEUSES FROM SEED.**—A splendid selection of handsomely coloured and marked Coleuses may be raised from seed. Reliable strains are offered by all the leading seed firms. To successfully raise plants, however, and grow them on to a useful size, heat is required. For germination bottom heat is desirable, so that there may be a quick and rapid growth from the first. Sow the seed in a light sandy mixture of loam, peat, and leaf soil, and when the seedlings can be well handled place them in small pots. Give plenty of heat and moisture at this stage. Shift as required into larger pots, 5-inch size being suitable for plants for ordinary decoration. In summer grow close to the glass in a sunny greenhouse, or one of intermediate temperature.—E.

— **THOSE TERRIBLE WOMEN.**—I have no doubt very many of your readers, in common with myself, were greatly amused over the East Cowes gardeners' manifesto and the horticultural ladies. Talk about not meeting trouble half way, our Island friends seem anxious to rush all the way they can to meet the trouble, of which after all there is no earthly danger. It is so obvious that no woman who is not prepared to assume man's attire, his responsibilities and his labours, can ever hope to displace him. I gravely doubt whether any woman, however clever she may be, contemplates anything of the kind. She may hope to find some employment of an horticultural nature suitable to her physical capacities; and she has the most perfect right to do so. I cannot understand the action of men who enjoy freedom denying it to the opposite sex. Is it not about time more sensible views as to woman's position in the world were held?—A. D.

— **WHITE COMMEMORATIVE FLOWERS.**—Many admirers of the late Mr. Gladstone have expressed strong desire that the anniversary of his death should be commemorated by the wearing of some white flower, Roses, Lilies of the Valley, and various others having been specially mentioned. As this is a proposal, if adopted, likely to have great interest for market growers of flowers, because nothing wild and common will suit the case, I have ventured to make a list of various white flowers, forced and otherwise, that can be had in considerable abundance on the 19th of May. White Roses have been specially indicated, but it is suggested that not enough could be produced to satisfy popular demands. That may be so, but capacities to meet such demands seem to be illimitable. No doubt the wiser proposal would be to require white flowers of any kind, and that would insure the provision of abundance. Specially reliable are white Roses, double Narcissi, Carnations, Lily of the Valley, Gardenias, Gladioli The Bride, Anthericum liliastrium, Orchids, Stephanotis, Bouvardia Humboldti, double Begonias, Eucharis amazonica, Lilium Harrisii, Pansies, Violas, Marguerites, Saxifraga granulata flore-pleno, white Scilla campanulata, Spiræa double white, Gloxinias, Irises, Pelargoniums, Stocks, and many others. This list shows that white flowers may be had in plenty, if desired, to suit the pockets of even the poorest. Whenever floral emblems are utilised it is rather important they should be of a cultivated order, because that means trade for the grower and an encouragement of home industry. It is a double satisfaction to lovers of buttonhole flowers if they can feel that whilst administering to their own pleasure they are encouraging labour, and thus making their gratification doubly reproductive.—A. D.

— **PYRUS FLORIBUNDA ATRO-SANGUINEA.**—The typical *P. floribunda* is very popular among gardeners, being one of the best decorative species. The variety under notice has also attracted a considerable amount of attention during the last few years on account of its richly coloured flowers. In habit it does not differ materially from the type, making a dense bush 8 to 10 feet high, and producing its flowers with great freedom. The usefulness of the plant is apparent, as it grows and flowers well in almost any position if given a little good soil to begin with. For shrubberies, groups in parks, or other places, it is equally suitable, while small plants potted in autumn and forced gently, make a pleasing addition to the occupants of greenhouse or conservatory in February and March.—G. K.

— **SULPHATE OF IRON FOR VINE DISEASES.**—According to French investigations the use is recommended of sulphate of iron as a winter treatment for the prevention of black rot, oïdium, mildew, and anthracnose of the Grape. The method of application recommended is to bathe or sprinkle the Vines with a 10 per cent. solution of sulphate of iron, and place the powdered sulphate about the Vines at the rate of 400 to 800 lbs. per acre, the quantity depending on the porosity of the soil. The use of sulphate of iron solution, as mentioned above, has been made in America for some years past for the prevention of anthracnose. The best method of making the application is with a brush, after the pruning has been done.

— **THE PERENNIAL PEAS.**—Occasionally in old-fashioned gardens one meets with masses of the perennial Sweet Pea, *Lathyrus latifolius*, and charming flowers they are in the early summer. Year after year, with scarcely any attention, they make their appearance, and their bright flowers are extremely useful for decoration. Once there, always there, may be said of the perennial Pea, and I know of a wild spot "where once a garden smiled," and there, with unfailing regularity, the *Lathyrus latifolius* produces nosegays for the school children to pick. In addition to the variety mentioned with its bunches of red flowers, there are *L. latifolius splendens*, a fine dark variety; *L. latifolius albus*, which produces large white flowers extremely useful for cutting, and *L. grandiflorus*, with large blossoms of a crimson scarlet tint.—H.

— **BEDDING PELARGONIUM WEST BRIGHTON GEM.**—The time has not yet come when Zonal Pelargoniums can be dispensed with for bedding purposes. The above variety recommends itself by its dwarf habit and the brightness of its scarlet trusses. The majority of these plants have the unfortunate habit, particularly in damp seasons, of making a superabundance of foliage at the expense of flowers. West Brighton Gem is far superior to many of its compeers in this respect. The wood is short-jointed and hard, even in wet seasons, and the output of flower continual, while in average summers the beds are a mass of brilliancy till late in the autumn if the old trusses are continually kept picked off. As with other varieties, the best results are obtained when the ground is not made too rich with manure, either natural or chemical.—G.

— **JAPANESE MAPLES.**—It was to me strange, that having such singularly beautiful dwarf trees and bushes of these lovely Acers at the Temple Show, only about one exhibitor made any really decorative use of them. When looking at the flat, though richly coloured, Caladiums in a few large groups, I could but think how much more beautiful would these leaf plants have appeared could they have been set under the overhanging leafage of the cut-leaved Maples. Oh, for the touch of a vanished hand, such as was that of the late John Wills, who would, out of the superb materials that some of our nurserymen possess, have created marvellous groups of exquisite charm and beauty. Why numerous collections of Maples should have been crowded into tents, rather than have been fully and effectively displayed outdoors, especially with a carpet of moss, in the same way Messrs. Fisher, Son, & Sibray did their fine groups, was inexplicable. This method of showing these plants in tents misleads the public somewhat, as they get to regard them as tender, needing greenhouse culture, whereas they do finely outdoors in the summer; some, indeed, well all through the winter. Then I marvel no one yet seems to have utilised them for bedding purposes in the summer. How charming would a dozen or so of nice heads look on a carpet of white, blue, or pink. I noted as very pleasing for this purpose *Acer palmatum dissectum* (green), and *A. purpureum* (red). These have lovely cut leafage. *A. reticulatum*, foliage pallid green veined dark green, and free growing, is a beautiful variety. *Acer rufifolium* has rich red leafage. Less red, but very pleasing, and dwarfer, is *Acer lineatifolium atro-purpureum*. *A. polymorphum purpureum* is good also. Charming, too, is *A. septemlobum elegans*, *A. sanguineum*, *A. japonicum aureum*, and *A. niskikigasane*—a horrid name, but a beautiful variety all the same.—A. D.

COB-NUTS AND FILBERTS.

(Concluded from page 422.)

PRUNING.

It is not a difficult matter to prune a bush that has been properly trained on the lines described, but to commence pruning one of the overgrown shapeless specimens such as are frequently met with is another matter, and therefore, perhaps wisely, they are generally left alone. Again, Nuts are frequently left unpruned because the grower is not quite sure which is the fruiting wood, and for this reason the pruning may be left till the end of March or early in April, when both catkins and female flowers will be open. Nuts produce fruit on the upper part of young shoots on spurs, and on the twiggy growth that is emitted from the main stems. The leaders of the main branches may be shortened on the orthodox method to about two-thirds their length each season, until they have reached the required height, after which they may be treated as spurs. Strong side shoots can be shortened to two or three buds, and will form spurs, and, while avoiding congestion, short twiggy growth that never fails to produce fruit blossoms should be encouraged, and in pruning care must always be taken to leave sufficient catkins or flowers for fertilisation. Kentish growers always prune close to the main stems, so that after the process the bushes have quite a skeleton appearance.

SOIL AND CULTIVATION.

Some of the best Nut plantations in Kent are on hillsides and sloping banks where the soil is not necessarily of a particularly fertile character, but friable and naturally well drained. Nuts appear to have a partiality for a rooting medium of somewhat brashy nature, and in many places where a shallow soil rests on the famous Kentish ragstone Cob-Nuts are abundantly produced. Low situations should be avoided, as bloom is liable to be destroyed by late spring frosts, and land holding water should be drained before planting, otherwise growth will be too rank. Though Nuts are grown in some districts on a chalk subsoil, it is generally where "rag" prevails that the most plantations are found. Ground should be broken up and worked prior to planting, and well established specimens give a quicker and better return than do recently rooted layers or suckers taken from the old bushes.

Nuts are grown either as an entire crop or with standard and bush fruit. Under the former system the bushes are disposed from 10 to 12 feet apart where the soil is good and the situation favourable. When planted between standard Apples and Plums the Nut bushes must necessarily be kept low, the advantage of this system being that the former act as a protection, and on this account it is favoured. Black Currants and other bush fruit are also grown between Nuts, and in this case the latter are given a wider distance between the rows. By this method the ground may be utilised to advantage while the Nuts are becoming established and come into bearing. Surface cultivation of the soil in plantations during the summer is good, and in the autumn after the leaves have fallen the bushes are examined, all sucker growth removed, and an application of farmyard manure forked in among them, together with the fallen leaves. Rag waste is used in some Kentish plantations at the rate of about 1 ton to the acre; also quick-acting fertilisers are applied as surface dressings in the spring.

VARIETIES.

Cobs and Filberts are to the uninitiated one and the same thing, but the difference is that the Cob Nut is round, and not covered by the husk, while the Filbert is oblong and entirely covered. Probably the best all-round Nut in cultivation is Lambert Filbert. This variety is largely grown in Kent under the name of Kentish Cob, and is sold as such. The mistake in nomenclature has doubtless arisen through custom, as the Nut is a Filbert with a fine oblong kernel, and the tree is hardy and a prolific bearer. The purple Filbert makes a handsome ornamental tree with its dark purple foliage, and as such it is grown in pleasure grounds, for which it is better adapted than in plantations. There are also red and white Filberts, so called from the colour of the kernels. Among Cob Nuts Cosford is a vigorous grower, producing a large white kernel. Merveille de Bollwyller is a true Cob with short husk and large shell. Pearson's Prolific makes a dwarf bush, and is suitable for planting under standard trees. The habit is sturdy and compact, the shells being well filled with sweet kernels.

GENERALITIES.

In order to keep Nuts in good condition as long as possible they must in the first place be left on the bushes till thoroughly ripe. After picking they should be laid thinly on dry shelves where the air can circulate freely through them. If not wanted for immediate use the husks, when dead and dry, may be removed, the Nuts placed in jars and fastened down perfectly air-tight. Nuts so treated and stood in a dry cool place will keep for a considerable time. Squirrels, rats,

and mice are all partial to Nuts, the former in woodland districts, where they abound, doing so much damage among the bushes that stringent measures have to be taken. Amongst the insect pests the Nut weevil, *Balaninus* (*Curculio*) *nucum*, is the most deadly. In May the female deposits an egg in the young fruit, and the larva when hatched feeds on the kernel and then eats its way out, falls to the ground, and passes into a chrysalis state. By way of remedy the bushes may be shaken in May, spreading sheets beneath to catch the beetles. If treated the same way in August all affected Nuts will fall, and they should at once be deposited in the fire. Soot and lime worked into the soil in the spring are disagreeable to the pests and beneficial to the Nuts.—A WORKER.

NOTES ON MELONS IN FRAMES.

(Concluded from page 403.)

STOPPING, TRAINING, AND SETTING.

WHEN the plant puts forth one rough leaf and then another, rub off the knob-like joint without injuring either of the leaves, to induce the production of two strong shoots in place of the one. Let these make six leaves, then again rub off the leads, and there will be a number of shoots, which only need a little training to let the sun get at them all as evenly as possible, to cover the bed with regularity. The stopping will give rise to several lateral branches with staminate and pistillate blossoms showing all over the plant. That is just what is wanted to get a good set—namely, several fruit blossoms fit for fertilising at one time. The shoots that reach first to within 6 inches of the sides of the frame must have their ends pinched off, and when the fruit is set and swelling the superfluous growths are thinned out or stopped, so that they do not interfere with light to the principal leaves. Even before setting any refractory growths are either stopped or cut away to secure an equality for all of space, and thus give every shoot a chance.

When the flowers appear a little ventilation keeps the air in motion, and moisture does not condense on the flowers to the ruin of the pollen and pistils. A slight warmth from lining the sides of the frame with grass mowings then does good, as it allows air to be given, especially in dull weather. If only a fruit blossom appears at first on a plant, nip it off, but two being expanded in one day, fertilise about noon, repeating this daily till enough fruit has set, which is easily seen by their commencing to swell. Whenever fertilising a flower pinch out the point of the lateral a joint beyond. From four to six are sufficient on a plant, for it is overcropping and overfeeding that take quality out of Melons. Steady supplies of nourishment, extracted slowly from a hard soil, make Melons as hard as cricket balls, and as luscious as honey inside. Set each fruit on a slate so that water will run off it. Clear away all flowers and fruits that are not required.

WATERING.

Up to the flowering period only give sufficient water to keep the plants in steady growth, and this is the most difficult point in the whole matter. If too much be given, the plants will produce so many leaves that the laterals carrying fruit will be smothered; if too little, the plants may become stunted, and red spider seize on them. The soil must neither be dust dry nor sodden, but just between the two, no water being given whilst it is in that state. But when it is getting dry, and the foliage is becoming a little limp under powerful sun, afford a fair supply. I water mine in fine weather twice a week, and in dull once, or not even that. Slight flagging is not always a sign of water being required, for excessive evaporation will cause it whilst the soil is quite moist, and a slight shading is better under such circumstances than a deluge of water. When flowering and setting withhold water, and while the fruit is swelling neither drown the plants nor let them perish through drought. On fine afternoons a light sprinkling, always keeping water from the stems of the plants, helps wonderfully, and prevents red spider. Before the process of ripening begins the soil should have a good store of moisture, in order that none will be required from that time until the fruit is cut, during which interval the surface of the soil should be kept perfectly dry.

RIPENING.

When the fruit has netted and the rind is hard it seems to concentrate its energies on the perfecting of the seeds, growing very little unless kept in a warm close atmosphere and lavishly fed at the roots. This is the period to get quality. It will not come at the finish unless stamina be there to support the effort; therefore do not over-feed, but keep steady, and when the fruit begins to change colour—a keen eye knowing long before the aroma pervades the air—add a lining (it is really astonishing what virtue there is in grass mowings), and also a little air day and night. If the fruit has been grown in partial shade do not expose it suddenly to the fierce rays of the sun, but let it ripen where grown, as the bine will pour its stores.

of matter into it, and it will ripen, and tell a pleasant tale on the palate. Cut directly the fruit is fairly ripe, and is giving out a good smell. I think cutting too soon an error, and letting the sun shine fiercely on the fruit for a day or two still worse, as it ripens too fast on that side and too little on the other. It is better to shade a little than to bake them, and use when evenly ripened all over. Then is the time to eat a Melon, and always before dead ripe, yet with the flesh melting to the rind, and that not much thicker than a sixpence. —EXPERIMENTALIST.

FRUIT NOTES—HATFIELD.

ROYAL GEORGE PEACH.—This fine old Peach seems to be a favourite at Hatfield, for there are two trees of it there, each covering the entire side of the roof of a 50-feet span house, but one is rather deeper than the other. One carries 400 fruits, these spread over so great an area, being comparatively thin, to secure a very fine sample; and the other has 350 fruits. Mr. Norman does not believe in overcropping, as it is in the end too exhausting. Each tree is on a tall clean stem that is a capital stock, as, in both cases, these stems have so admirably swollen with the trees.



FIG. 87.—RUBUS DELICIOSUS.

RUBUS DELICIOSUS.

IN several places about the gardens at Kew large masses of this may be seen in flower. It is, from a flowering point of view, by far the most ornamental of the hardy species, producing in great profusion its pure white blossoms. The flowers (fig. 87) are about the size of those of the "Dog Rose," though one form has flowers which are considerably larger.

In habit it makes a strong upright bush, from 4 to 6 feet or more in height, with leaves resembling those of *Neillia opulifolia* to a certain degree. The wood resembles that plant even more than the leaves, it being difficult to distinguish the two when not in leaf. The fruit is red when ripe, but not palatable. This *Rubus* grows well in sandy loam, to which a liberal quantity of manure has been added. It will be found advisable after flowering to cut out some of the old wood, to allow of strong young shoots being made. It can be rooted from cuttings, but not readily. The best methods of propagating are seeds or layers. It is a native of the Rocky Mountains.—D.

On the obverse side of each house there are smaller and dwarfer trees; but these two Royal Georges, with their 50 feet length each, are remarkable ones.

PEARS.—There are lengths of Pear wall at Hatfield that it would be difficult to find excelled anywhere. The walls are all stuccoed and wired, hence there is no nailing, a matter of the greatest importance so far as labour is concerned. It is there possible to look along great lengths of high wall and see from end to end every foot of wire fully furnished and the trees as clean and in luxuriant health as well can be. In the stable yard and on some ancient buildings adjoining are fine trained trees worked on the Whitethorn stock that are doing well, and showing that this stock has not, in these cases at least, that straggling character so often attributed to it. Out in the open, bush trees in great numbers and of considerable size are set most freely with fruits, there being promise of a heavy crop. Certainly trees should now find great benefit from the month's heavy rains, and it may in consequence be well to allow free wood growth for a little while that the strong, inevitable sap flow, may be utilised to thoroughly swell the fruits.

APPLE BUSH CORDONS.—This as a descriptive term seems to be a contradiction, but at Hatfield, where there are hundreds of great bush

trees, every one seems to be composed of a series of spurred cordons, for each branch stands out from any other, separate, and with ample room, reaching to lengths of from 8 to 12 feet, so placed that if swayed by the wind, they do not in any case beat one against another. When I saw the Apple trees recently nearly all were in full bloom, for flowering is rather later on the north than on the south side of London. Should the set be as good as the blossom warrants, then the crop next autumn would be worth seeing. Trees of this nature, planted 20 feet apart, and so trained, should in bulk yield a wonderful crop. Mr. Salter, at Woodhatch Reigate, prunes his bush trees in just the same way, and he obtains fine, results and noble fruits.—A VISITOR.



NEW ROSES.

I HAVE read with much interest "D., Deal's," contribution on this special subject to page 426. While on the whole coinciding with his observations, I think he somewhat underestimates the value of Clara Watson, which was in my own garden during last summer the grandest of the Hybrid Teas. I am, aware, however, that it does not succeed so admirably in other regions; and perhaps the weather is too hot for it occasionally in the south of England. I am glad to find that Clio is appreciated by your veteran contributor. Waltham Standard I have in my garden for the first time this year; but I had the privilege of seeing it last summer at its native place in magnificent bloom.

Mrs. W. J. Grant is very bright and beautiful in its earlier stages of floral development; I do not, however, find it quite so impressive when fully expanded; the promise it gives in bud form, however great, is by no means realised. In this respect I think it is much inferior to La France or Lady Mary Fitzwilliam, the richly fragrant and nobly endowed varieties from which it was derived.—DAVID R. WILLIAMSON.

NEW ROSES OF 1897-8.

NOW that the spring lists have arrived, it may be of some service to amateur growers to know those which have been found really good by other rosarians than the raisers. Unfortunately we have a formidable list each year, and few of them are of sterling merit. Those I name, and briefly describe below, have either flowered well in this country, or have been seen by more than one reliable authority. They may, therefore, be considered worthy of trial by those with only small Rose gardens. I do not propose touching upon any but those varieties sent out in 1897, or during the present spring.

KILLARNEY.—This made a favourable impression on me on more than one occasion. It is a constant bloomer and of free habit. The flowers are large, the buds pointed, of great length, and the colour a unique combination of flesh shaded with white and pale pink. It is a good Rose, and will be a general favourite when known.

DAISY.—Though only a moderate grower, this variety flowers freely, and the blooms are large, full, and of perfect form. Colour a rosy pink suffused with soft silvery pink. It has the merit of being exceedingly fragrant.

COUNTESS OF CALEDON.—The N.R.S. "card of commendation" was accorded to this at Derby in 1895. I have grown it, and find it a good habited variety, and quite perpetual. The colour is rich carmine rose, and the flowers are splendidly formed.

ROBERT DUNCAN.—A grand Rose, with large flowers composed of stout petals of a bright rosy lake colour. It is one of the best flowers of this shade.

BERYL.—This is likely to be useful because of its free habit and continuous blooming. The long pointed buds are sure to be popular as coat flowers, being of a distinct deep golden yellow, and very highly scented.

ARDS ROVER.—In this variety we have a deep crimson and maroon climber. It should prove useful considering that most of our climbers are light in colour.

MURIEL GRAHAME.—Of this I need say nothing, as it has been written about so often, and is now so well known.

WHITE MAMAN COCHET.—As its name implies, this is a sport from Maman Cochet. It has done well, and is evidently a great acquisition to our white Roses.

PURITY.—An aptly named Rose that appears to me well adapted for pillars and garden decoration. Its colour is pure white when fully open, but faintly flushed with pale flesh during the younger stages.

MRS. FRANK CANT.—In 1897 this was awarded a "card" at the N.R.S., and is a distinct H.P. with silvery white edges and clear pink centre.

MRS. F. W. SANDFORD.—This is a pale blush sport from Mrs. John Laing, and will probably be one of our best light Roses.

MRS. RUMSEY.—Much has been written of this Rose which deserved attention. It is a deep pink sport from Mrs. Geo. Dickson, is mildew proof, and a grand autumn bloomer. It is good either in pots or in the open.

EMPRESS ALEXANDRA OF RUSSIA.—This variety flowered well with me last autumn, and is a free grower. It is of unique colour, rich lake red, orange, saffron, and fiery crimson being all intermingled.—A. PIPER, Uckfield.

METROPOLITAN NOTES.

THE great metropolis possesses countless attractions for country residents, in which even such stay-at-home and duty-serving men as gardeners share, but though the pleasure of "sight-seeing" may form some portion of the programme, yet a horticulturist's beloved and absorbing, though exacting business, always enters largely into the motive and objects of a journey to London. There we expect to find the concentration of all that money, skill, and energy can produce, and in consequence many valuable lessons can be learned on a short trip if the true gardener's eagerness for knowledge be the guiding force. It is the constant demand for up to date information, the desire for advance with the perpetual freshness and varying nature of the subjects which render the horticulturist an eager and life-long student. This is equally true, whether he be an amateur or professional, and if proof were required it were only necessary to point to the horticultural journals, and the wonderful mass of literature devoted specially and solely to the subject.

It is not my intention to enlarge upon the attractions of horticulture, all readers of our excellent Journal are familiar with them, but I will try to record a few of the ideas acquired, and to note what interested me on a recent trip to the great city and its suburbs. Perhaps the first object of attraction to a visitor from a rural district where towns are small, are the shops, and to a horticulturist the florists' and fruiterers' emporiums in the best localities present much to admire, interest, and instruct, if they be observed with "seeing eyes."

At one period of my life a kindly employer gave me the opportunity to visit Paris, a great event in a gardener's career, and I well remember how deep an impression was produced in my mind by the florists' shops and the grove-like, tree-planted boulevards and avenues of that city. The florists' establishments were really tastefully arranged exhibitions of their choicest productions. Scarcely a shop was seen in which bouquets, wreaths, crosses, and vases were not displayed with as much taste and effect as were employed in the individual objects. It was a revelation to one accustomed to the plain, practical methods of the British shop-keeper; it was also a sound lesson, as certainly a beautiful object pays for being displayed to the best advantage. The thought was in my mind at the time that if the dressmakers and milliners have to go to Paris for their novelties in fashions, so, too, might our florists seek for hints in their department.

Some years have elapsed since my travels in French territory, and in that time a great change has taken place in the florists' shops of the metropolis. It is now possible to take a tour through the principal West-end streets and to see as tasteful floral displays as could be wished. The windows are suitably draped with curtains, or what acts as a foil to the colours of the flowers; foliage plants are set here and there in groups or singly, and even loose flowers in stock for use are arranged in vases with the greatest care and skill.

All this means a considerable expenditure in labour and time, and the employment of real artists in flowers to do the work; but it pays, and to a commercial people this, after all, is the test of good work. The principle is the same as that which regulates the sale of imported fruits; all our foreign competitors have found an advantage in sending their wares here well and tastefully packed, tempting to purchasers, and offering a kind of guarantee of value for money. We Britishers have too much of that John Bullism which prompts us to say, as it were, "We offer you a first-class article; take it or leave it, as you like;" and the fact is that many a "first-class article" in consequence is "left" because another is set before us in a more tempting manner, and the vendor seems to be bowing politely and saying, "Honour me by trying my goods; I am sure you will come again."

Many novel and pleasing designs were noted in the objects displayed, but two facts strike one generally as a divergence from past methods. One is the extensive employment of the so-called "Russian Moss," a kind of lichen, for wreaths and crosses, a purpose for which its clear grey colour fits it admirably, and it is certainly an improvement upon the dingy or dirty-looking moss sometimes seen. Large quantities of this lichen are now imported in neat square boxes, and it comes out as clean and fresh as if it had been just gathered; it also lasts for a considerable time without deterioration. Another point is that coloured flowers are much more generally used in wreaths and crosses than formerly. Violets and dark blue Pansies have been commonly employed for long past, but now it is not uncommon to see Roses, or even Orchids, introduced into such designs.

In a Regent Street florist's I saw one of the most beautiful crosses that ever came under my notice; it was about 3 feet high, the ground-work being entirely in large double white Stock blooms, set singly, but closely, and from the centre of the cross arose a most charming cluster of Cattleyas, Lælias, and Dendrobiums, with a few long sprays of Lily of the Valley and Asparagus. The arrangement was most artistic, and rich as the colours were there was nothing garish or offensive to the most fastidious taste, unless colours are objected to altogether.—A COUNTRYMAN.

(To be continued.)

CAMELLIAS IN THE OPEN AIR.

THE hardness of Camellias may be fully perceived by a visit to St. Leonards, Windsor, the residence of F. T. Barry, Esq., which is situated about three miles from Windsor, and commands one of the finest views to be obtained in that district. In the pleasure grounds, irrespective of situation, are planted many varieties of Camellias, of which 280 plants, ranging from 3 to 10 feet in height, occupy a considerable space. Large beds have also been made for the reception of younger plants, and between forty to fifty have been planted this year. Some of these are from seeds that ripened in the open.

The variety Jubilee commenced flowering on January 17th, and L'Insubria January 26th. Morse's Single White is a grand variety, one plant carrying flowers fully 6 inches across. Imbricata rubra, planted nine years ago, forms a splendid specimen 10 feet high and 6 feet through. Five hundred and eighty expanded blooms were counted on this plant at one time, to say nothing of the numerous buds to follow.

The soil consists of a clayey loam with a mixture of decayed leaves. Mr. Brown, the head gardener, says that in planting he makes no exception as regards variety, being fully convinced that they are thoroughly hardy, which the fine habit and vigorous constitution of the plants referred to shows.—H. S., *Dorking*.

HARDY FLOWERS IN OTHER GARDENS.

ROCKVILLE, MURRAYFIELD.

AFTER visiting the Edinburgh Botanic Gardens (page 428), those of Mr. P. Neill Fraser at Rockville, Murrayfield, Edinburgh, were next seen, and fortunately by the time they were reached the rain had ceased. Mr. Neill Fraser's zeal for horticulture is well known, his services for long as Honorary Treasurer, and now as one of the Vice-Presidents of the Royal Caledonian Horticultural Society, having done much to forward it in the North. That his interest in gardening is not confined to promoting its advance in this way is evidenced by the garden at Rockville with its very extensive collection of flowers, shrubs, and Ferns. This has been in process of formation for many years, its owner having kept for about thirty years a garden book containing a record of all the plants added during that time. The garden is beautifully situated on Corstorphine Hill, and commands very extensive views. Its attractions are added to by a sheet of water, which fills an old quarry in the grounds and forms a pleasing feature.

The garden contains a remarkably fine collection of hardy and other Ferns. It was too early to see the outdoor Ferns in their full beauty, but anyone who was an ardent admirer of such plants could not fail to be delighted to see so many rare and beautiful genera, species, and varieties. It is unfortunate that there are so few who grow large collections of the many exquisite forms of the Fern. In the houses were some fine specimens of exotic species, and some of the Filmy Ferns showed how carefully they were looked after by Mr. Fraser and his gardener.

Of more interest to the writer were the flowering plants. These were in great numbers, and occupied a large space. By the margin of the lake is an admirably constructed rock garden, where many alpine were coming into bloom. It was a little too early in the season to see them, but one could observe their growth and their promise of bloom. Aubrietias were fine, and some old waterworn rocks nearer the house were prettily draped with their foliage and flowers. Dwarf Phloxes are numerous, Mr. Neill Fraser having collected all he could procure. This, indeed, seemed to be the rule with other alpine. Even the Cerastiums had not been overlooked, and several pretty species were used with much taste to droop over the large stones.

The most complete collection of Sempervivums I have ever seen was one of the features of the garden. This had been procured from the Continent, and contained 300 species and varieties. Among some there was, as might be expected, a good deal of similarity, but had time permitted an hour or two might have been enjoyably spent in studying these Houseleeks. Saxifragas and Sedums were also very largely represented. One might indeed say the same of every genera of the best alpine. Hardy Orchids, not always seen in collections, were also numerous and thriving.

Among plants in flower was a remarkably beautiful form of *Primula denticulata alba*, of more than usual purity, and especially well formed. *Jeffersonia diphylla* was also very finely grown, and several *Trilliums* showed every sign of being in a congenial place. *T. sessile californicum* was in flower, and Mr. Neill Fraser pointed out a *Trillium* which is unknown to most growers, and has at present no recognised name, although *T. declinatum* is suggested for it. It is of tall growth with pendant white flowers.

Hardy bulbs are very largely grown, Snowdrops, Crocuses, Narcissi, Fritillarias, Brodiaeas, and other genera being represented. Very fine was a border of *Brodiaea (Triteleia) uniflora* close to the house, the superior effect produced by established bulbs being observed in the greater profusion of flower they gave than could be seen on those recently planted. At the edge of the gravel walk they were very vigorous. *Fritillaria citrina* was in flower in one of the rock gardens. Shrubs are largely grown, and a special feature of the garden is the collection of Ivies, which are of great variety and interest.

Primulas are favourites; but a special feature is made of self-coloured Polyanthus, principally white and yellow varieties. This is the strain referred to by the writer in his remarks on the one named John Wilkinson

on page 393 of the Journal, and it may safely be said that there are few strains of equal merit. The best flowers obtainable formed its foundation, and the plants produced were rigorously selected, all inferior varieties being weeded out. The result has been plants of vigorous habit with large pips and trusses, and remarkably uniform in quality. Some splendid whites and deep yellows were among the many plants grown, and one could have spent longer time in more critical examination. Such a garden is a treat to an enthusiast, and the writer hopes to avail himself of the kind invitation to return to see the treasures of Rockville.—S. ARNOTT.

(To be concluded.)

PRIMROSES CHANGING COLOUR.

I USED the term "acaulis," on page 430, as that more commonly used in gardens than "vulgaris," in order that there might be no question as to the identity of the subject in hand, afterwards giving its correct botanical nomenclature in reference to variation of form and of colour by natural cross-fertilisation or hybridisation.

"A. D." says, page 444, that the Cowslip is *Primula veris*, and its red form *P. v. rubra*. I hold that the nomenclature given on page 430 is correct, and that of your correspondent indefinite, *P. veris* being a mere syn. of *P. officinalis*, and *P. v. rubra* of "A. D." identical with *P. variabilis*. I must also demur to the dictum of the Oxlip being but a large coloured form of the Cowslip, for there is no colour but yellow in the true *P. elatior*, a much more uncommon species than *P. variabilis*, the parent of the Polyanthus.

I must also take exception to "A. D.'s" deduction of the change of colour in my Primroses being due to the presence of iron or some other mineral ingredient in the soil without further proof, for on the same formation all the wild Primroses are of the true "primrose" colour in their several generations, never being affected by the natural agents of cross-fertilisation. In the first generation the seedlings come coloured in gardens. Will "A. D." explain that phenomena?

Iron soils are "rare," says "A. D.," but no soil can be or is devoid of iron for the successful growth of any plant. Besides, how comes the grass to be devoid of iron, and the bare soil to show abundance or sufficient to change the colour of both the Primroses and Cowslips, the first in plants and the latter in the seedlings? According to analysis grass land contains more iron than arable, therefore the iron doctrine falls to the ground, as the iron itself has no influence whatever on the colour of Primrose flowers or otherwise, for they cannot be found coloured on soils where the water passing from them is red with oxide of iron. I threw out the hint in that direction simply to induce some of your able chemically instructed correspondents to enter the lists, but I am afraid very little is known of the subject upon any sure foundation.

Half a century ago I planted some wild Primroses in my father's garden, and these all came coloured in flower the following season, while those on the hedgebanks, in copses, and woods remained primrose. The soil there was alluvial, but of the new red sandstone formation. Twenty-five years back I took hundreds from the woods and placed the plants in the garden then in my charge. The flowers all came rosy lilac the following year, and the seedlings from them were still more highly and variedly coloured. That was on the lias formation, where all the Primroses in the glades, copses, and woods were "primrose." Why the variation of colour in even seedlings of transferred Primroses, and no change of colour in the wildings of the square miles of country around?

I may also say that I have had "hands" transferring Primrose roots by the thousand from hedgebanks, copses, and woods to similar positions by woodland walks and glades, but have never found a single instance of change of colour, and that in five different parts of the country, and in two instances in towns. On cultivated soils only do the variations occur, either in the plants first introduced or in their progeny of the first generation, and so far from the change being "rare," I find it invariable, and not unknown even in the Thames Valley. "A. D." admits coloured seedlings; but to what does he attribute the change? Cross-fertilisation will not do, for the same agents must exist around as well as within the precincts of the ground containing the transferred plants, and on this point I think matter for serious digestion and practical value might usefully be adduced by your numerous correspondents.

Allow me to assure "A. D." that I am neither troubled by a bad nor convenient memory, and cannot help facts being indelibly impressed on my mind. Though differing from "A. D." on the point in question I all the same appreciate his many interesting notes, and wish other practical men would follow his example in contributing such varied material to the pages of "our Journal."—ST. ALBANS.

[In an Oak wood of many acres in which the ground is carpeted with Primroses we have occasionally come across a plant, perhaps one out of a million, with dark coloured flowers. We have seen numbers of plants with similar flowers in cottage gardens borne by plants alleged to have been brought from the woods of the common Primrose. This change is fully believed in by numbers of cottagers, but of the assumed fact we have personally no verification. In Mr. G. F. Wilson's interesting woodland garden in Surrey we have seen countless thousands of yellow and buff Polyanthus on one side of a road and coloured forms on the other side. There is presumably the same quantity of iron in the soil on both sides, and this considerable, judging by the redness of the water in the open drains or ditches. Mr. Wilson's opinion would carry weight on the subject in question.]

RHODODENDRON SMIRNOWI.

AMONG dwarf habited species this stands out conspicuously, both on account of its large distinct foliage and big flowers. It is a native of the Caucasus, and at present is little known in this country. Several plants are to be seen at Kew, the largest being about 1½ foot in height, by the same in width. It flowered at Kew for the first time in 1893, and has bloomed freely each year since.

In height it grows very slowly, increasing in width more rapidly, and making a low dense bush. The leaves are about 5 inches long, by 1½ or 2 inches in width, thickly covered when young with a soft white felt, which as the leaves mature disappears from the upper surface, but remains on the under side during the whole life of the leaf. The flowers are rosy lilac, 3 inches across, and produced in loose trusses; the petals broad, with crimped or undulated margins.

Several hybrids have been raised at Kew by crossing this with garden varieties, the object being to obtain a race of large-flowered plants with Smirnowi habit and foliage, and the denser truss and wide range of colour of the garden varieties. The first of the Kew hybrids is now in flower, and hopes are entertained that the new race will shortly be an accomplished fact, as the flowers are exactly intermediate in colour, while the Smirnowi habit and foliage is retained.—W. D.

HORTICULTURAL SHOWS.

MANCHESTER WHITSUNTIDE SHOW.

IT is much to be regretted that the great London show at the Temple should clash with the Manchester Show, for if this were not the case we should imagine that the latter would probably rank as the finest exhibition ever seen, and the thanks of the Mancunians are due to the trade for the magnificent display brought together. Not that the Manchester Orchid lovers suffer very much by comparison, for their collections are quite up to date in all the best known varieties; but such meetings as these help to bring out the very latest, and here the trade certainly are seen to the best possible advantage. As usual, Orchids were in strong force; in fact, the exhibition house was one great display, sufficient to satisfy and engross the attention of connoisseurs for many hours; nor were the Manchester amateurs slow to avail themselves of the opportunity, as evidenced by the great attention paid by the ladies and gentlemen present, and the display was of such excellence as to satisfy the most exacting. When we come to read of the wonderful Temple Show, and to see this great exhibition also, we may well content ourselves with the thought that horticulture is advancing by leaps and bounds, and that each year brings forward horticulturists thoroughly imbued with the true spirit which should dominate them.

Messrs. Sander & Co., St. Albans, although not so largely represented as in former years, were well to the fore with new and rare plants, *Acalypha Sanderi* being much admired, the handsome rosy crimson flowers being in striking contrast to the bright green foliage. *Anthuriums* were large of spathe and well flowered. A giant plant of *Dracæna Sanderiana* was conspicuous, while new Palms were attentively noticed. Some eighteen Orchids were sent by the celebrated Chelsea firm of Veitch, but what of the quality was best judged by the crowded state of the visitors in the vicinity. Every plant was a prize to the fortunate buyers; but one which stood out as the gem of the show, or that has perhaps ever been seen, was the gorgeous *Lælio-Cattleya Eudora* Madame Albert Hye, the splendid hybrid between *Cattleya Mendeli* and *Lælia purpurata*, with rose sepals and petals, giant crimson lip beautifully fringed with gold, and chocolate throat marking. *Lælia purpurata formosa* and *Lælio-Cattleya Ascania* were alike excellent. Messrs. Charlesworth & Co., Bradford, contributed handsomely to the general effect, *Cattleyas Mossiæ* in such choice forms as *Princess*, *Reineckiana*, and other well known varieties predominating. The *Odontoglossums* and *Cypripediums* were also good. Messrs. Jno. Cowan & Co., Ltd., Gateacre, Liverpool, had grand types of *Lælia purpurata*, *Cymbidium* profuse in flower and variety, *Cattleya Mossiæ* very fine, with *Odontoglossums* excellent in every way.

Messrs. B. S. Williams & Son had a bright miscellaneous collection of Orchids and flowering plants, including *Boronias*, *Kalosanthos*, *Ericas*, with foliage plants to complete a capital table. Messrs. Fisher, Son, and Sibray, Sheffield, showed a well cultivated collection of *Crotons* each end of the table, being banked with Orchids. Mr. A. J. Keeling, Cottingley, Yorks, had a small but meritorious display of Orchids, many choice varieties being noticeable.

For the best collection of Orchids in bloom (nurserymen) three competed. Mr. James Cypher, Cheltenham, having a good position, made the most of it, the result being a striking and beautiful picture, the Orchids being of the best. Mr. John Robson, Altrincham, was placed second, the types of *Lælia purpurata* being splendid, as were, indeed, almost the whole of the plants. Messrs. Heath & Son, Cheltenham, had a formal arrangement for third position; but the beautiful *Lælia purpurata* were of such excellence as to demand attention.

In the corresponding section for amateurs E. Ashworth, Esq., Harefield Hall, Wilmslow, gained honours with a collection notable for excellent variety. *Lælia purpurata* in charming light and dark shades, *Cattleyas Schröderæ* and *Mossiæ*, *Cypripediums* and *Odontoglossums* in such fine forms as to almost bewilder. Certainly Mr. Ashworth has never been seen to greater advantage. High culture, good type, and bright flowers were conspicuous in the admirable arrangement staged by A. Warburton, Esq., Vine House, Haslingden, the *Cattleya Mossiæ* being of the best.

Three entered for the best collection of *Cattleyas* and *Lælias* in bloom, Thos. Statter, Esq., Stand Hall, Whitefield, winning with one of his admirable groups. *Lælia purpurata Statteriana*, *Lælia elegans Statteriana*, *Cattleyas Mendeli superba* and *Reineckiana* being grand, as was *Lælio-Cattleya Phœbe*, a chaste and beautiful variety. The second prize went to Duncan Gilmour, Esq., Sandygate, Sheffield, with an extensive and rich assortment. Mr. Thompson of Stone and Mr. F. Hardy, both so well known for their good work, were sadly missed from the *Odontoglossum* class, there not being an entry. For ten specimen Orchids in bloom Mr. Ashworth had in an exceptionally good exhibit of *Cattleya Skinneri alba*, *Odontoglossum Vuylstekeanum*, *Lycaste Skinneri*, and others. Mr. James Cypher was a worthy follower with bright specimens, Thos. Harker, Esq., Didsbury, being third.

The stove and greenhouse plants were also arranged in this house the prize specimens staged in the open class by Mr. Cypher consisting of his grand *Pimeleas*, *Ericas*, *Aphelaxis*, and *Clerodendron*, and in the amateur class by Mr. Wilkes, gardener to Miss Lord, Ashton-on-Mersey, consisting of a wonderful specimen *Dendrobium fimbriatum oculatum*, a fine *Anthurium Scherzerianum*, and *Allamanda grandiflora*. Mr. Wilkes also won with single specimens. Mr. McIntyre, gardener to Mrs. G. Pease, Darlington, won the prizes for six fine-foliaged plants and ten exotic Ferns.

Coming down the rugged steps into the annexe one could not but feel that, with the exhibition house 300 feet in length, and the annexe 400 feet in length, all covered in with glass, there could be no finer place in England to hold an exhibition. If there were one attraction greater than any other, it was the bank of herbaceous *Calceolarias* staged by Messrs. Sutton & Sons, Reading. In it one could find every conceivable shade of colour, both self and spotted; the plants were dwarf and the flowers large. It was without a doubt one of the finest collections ever staged. The Peas, too, came in for their meed of praise; Sutton's Seedling, Productive, and Empress of India showed the advance this firm is making in this direction. Messrs. Clibran & Sons, Altrincham, had an excellent display. The *Violas* were charming, *Calceolarias* very special, whilst miscellaneous plants were thoroughly up to the well-known Oldfield firm's style. Messrs. Dickson's, Ltd., Chester, staged a pretty and interesting display of some two dozen bunches of cut herbaceous flowers, fifty pots of *Violas* and *Pansies*, and it was pleasant to note this firm taking an increasing interest in pot *Auriculas*. The Japanese Maples were of the finest, and were much admired. Messrs. R. Smith & Son, Worcester, deservedly earned the gratitude of all visitors by their superb *Clematis* in pots. The *Boronias* formed a pretty edging. It was worthy of the firm's reputation. Mr. J. Waterer's *Rhododendrons*, planted out and in pots, were worthy of all admiration. Mr. Wilkes won with *Calceolarias* and *Cinerarias*, while J. Brown, Esq., Roses in pots were capital, and thoroughly worthy of the prize awarded. Messrs. W. & J. Birkenhead's hardy Ferns were so beautiful as to make one wonder why their cultivation is not more generally taken up, for they certainly put to the blush many of the exotics.

The groups of plants were up to the usual Manchester standard. For nurserymen, Messrs. R. P. Ker & Sons, Aigburth, Liverpool, won the award handsomely. The arrangement was light and faultless, their beautiful foliage plants, chiefly *Crotons*, being most telling. Mr. A. J. A. Bruce, Chorlton-cum-Medlock, was little behind, the flowering plants being judiciously distributed. Mr. Bruce also won with a choice bank of *Carnations*. Mr. Wilkes again proved his ability in the local group of 100 feet, and was second to Mr. McIntyre in the 200 feet, the latter winning the first prize with a superb group. The second prize in the 100 feet was taken by Mrs. Jno. Fielden, Dobroyd Castle. W. H. Thorley, Esq., Chorlton-cum-Hardy, won with fair *Zonal Pelargoniums*; and Mrs. Blair, Whalley Range, with twelve *Gloxinias*. Table plants were effective, but bouquets were poor.

In addition to numerous first-class certificates and awards of merit, gold medals were awarded to Messrs. Sander & Co., St. Albans, for Orchids and new and rare plants; Fisher Son & Sibray, Ltd., for *Crotons* and Orchids; Sutton & Sons, Reading, for *Calceolarias*; J. Veitch and Sons, Chelsea, for their *Lælio-Cattleya*, mentioned elsewhere; and Sir Trevor Lawrence for *Cypripedium Olenus*, a grand dark spotted variety, very much admired. Silver medals were awarded to Messrs. Charlesworth & Co., Heaton, Bradford; J. Cowan & Co., Liverpool; and A. J. Keeling, Bingley, Yorks, for Orchids; B. S. Williams, for Orchids and plants; R. Smith & Co., Worcester, for *Clematis*; J. Waterer, Bagshot, for *Rhododendrons*; and A. J. A. Bruce for *Carnations*.

Thomas Statter, Esq., Chairman of the Council, occupying the chair in the absence of the Earl of Derby, spoke of the hopeful state of the Society. He emphasised the importance of the Press in helping forward the good work of all such societies by trying to get the public to attend, and mentioned the interesting fact that the large amount of money given in prizes had all been provided heartily by members of the Council. To Sir Trevor Lawrence, Bart., he, in the name of all present, gave a hearty welcome on his first visit to Manchester that day, and expressed the hope that he might oftener come amongst them. Sir Trevor, in reply, thanked all present for their sincere welcome. He was greatly surprised at the splendid show that day. He emphasised the importance of the highest knowledge being brought to bear in the pursuit of gardening, believing that the scientific gardener will be the one preferred to that of the rule of thumb. The healthy state of the R.H.S. was mentioned with pleasure, Sir Trevor concluding by saying how delighted he had been with the grand show and his first visit to Manchester, and promising to be amongst them again in the near future. Professor Leo Grindon proposed the toast of the Society, and Mr. Tait that of the Judges, Mr. Owen Thomas and Mr. Gribble responding. Mr. P. Weathers, the Curator, appears to be

the right man in the right place, and his unfailing courtesy, coupled with that of Mr. Paul, his assistant, render the Manchester Shows most enjoyable. The gardens are in splendid condition, but more of these anon.

BATH AND WEST OF ENGLAND.—MAY 25TH TO 30TH.

THIS Society, under the presidency of the Right Hon. the Lord Windsor, held its annual show in the Cathays Park at Cardiff, in ideal weather, and proved in every particular a magnificent exhibition. The metropolis of Wales is singularly fortunate in having such an admirable site as the Cathays Park for this purpose, for being in the centre of the town it enjoys the facilities of close proximity to railways and hotels, while its sixty odd acres possess the sylvan and rural beauty so essential to a happy display of things pertaining to agriculture. Though an agricultural show, it was that and something more, for its horticultural section was an attraction in itself, and well worth a visit.

Undoubtedly from a point of effect of arrangement the pavilion devoted to floral and plant exhibits was the prettiest that has been seen in Wales for years, eclipsing in many ways the shows of the Cardiff Horticultural Society. In accordance with the usual custom of this Society no prizes or certificates were given to horticultural exhibits, thus causing it to be solely supported—with the exception of Mr. A. Pettigrew, gardener to the Marquis of Bute—by nurserymen and florists in the trade. Though exhibits one and all were admirable and tastefully arranged, yet without a doubt the finest and most attractive display was an arrangement of Carnations exhibited by Messrs. Cutbush & Son, London. It occupied a place of prominence at the extremity of the pavilion, and being designed on the ground level, was seen to its very best advantage. As a background, Palms, Bamboos, and Crimson Rambler Roses were arranged, while Cocos Weddelliana and Adiantums were tastefully interspersed. The Princess of Wales and Old Blush Malmaisons were very striking and in perfect form, while Germania and La Villette were irresistibly attractive. A well-flowered plant of the new Malmaison Madame Adeline Patti elicited unbounded admiration from Carnation enthusiasts who had the opportunity of inspecting it.

Another very attractive and interesting exhibit was that staged by Messrs. Paul & Son, Cheshunt; the cut flowers of their sweet-scented unnamed Rhododendrons, and their named novelties of double and single Lilacs, were the feature of the stand. The former, offered for sale for the first time at this show, are really very fine, and cannot fail to commend themselves in every way to lovers of Rhododendrons, for in delicacy of colour and form and in fragrance their flowers are delightful. The Lilacs, especially the white alba grandiflora and the Centranthus rubra-like flowers of Madame Krentes, Philemon, and Souvenir de L. Spathe were very striking. These novelties, whilst possessing a marked richness of colouring, appear to retain the habit and peculiar gracefulness of the old Lilacs. Besides Rhododendrons and Lilacs, Paul & Son exhibited a very fine collection of cut perennial flowers, and also a lovely specimen of the new Polyantha Rose "Pschye," its light pink flowers delighting and captivating everyone.

Messrs. R. Veitch & Son of Exeter, in an exceedingly interesting collection, exhibited some very fine Bamboos, amongst which Phyllostachys castillonis was conspicuous with its polished green and yellow zigzagged stem. Messrs. Garaway & Co., Bristol, exhibited in a collection of miscellaneous plants two good examples of Acalypha Sanderi—quite a novelty, at least in South Wales—the red drooping spikes of flowers, resembling those of Love-lies-bleeding, standing out well against the dark green foliage, making them prominent objects in the floral tent. A new white Carnation, George Brooks, in this stand, gave every promise of becoming an acquisition.

An intensely pretty arrangement was that staged by Messrs. G. Cooling and Sons, Bath. Their boxes of cut Roses were particularly nice. Mr. W. J. Godfrey of Exmouth staged a gorgeous display of Pelargoniums, and Messrs. Laing & Sons of Forest Hill a fine collection of stove plants, and Messrs. Barr & Son alpine plants and herbaceous flowers. Amongst local exhibitors Mr. William Treseder, Cardiff, was in evidence with his stands of cut flowers, the bouquets, wreaths, and crosses being magnificent expositions of tasteful art. Mr. Ralph Crossling, Penarth Nurseries, showed a collection of well grown foliage plants, with Cannas in flower happily intermixed to lighten it up.

As previously noted, Mr. A. Pettigrew, Cardiff Castle Gardens, for the Marquis of Bute, was the sole one outside the trade who contributed to the success of the horticultural section. The group occupying the most prominent central position of the Pavilion was admirably arranged, giving a most desirable light and airy effect. The centrepiece was a splendid specimen of Areca lutescens, while around were arranged graceful Palms, well coloured Crotons, Dracænas, and Pandanus, with a variety of flowering plants, amongst which Arthropodium cirrhatum was conspicuous with its graceful pendulous orange-like blossoms appearing to impart its lightness to the entire group. Adiantum cuneatum, Isolepis gracilis, and Panicum afforded a suitable and agreeable finish to the whole. W. Herbert Fowler, Esq., the Secretary of the horticultural department of the Bath and West of England, is to be complimented upon the success of the show, which will be long remembered by horticulturists and lovers of flowers in the principality.

Messrs. Webb & Sons, Wordsley, Stourbridge, have a display which fully sustains their reputation for the superiority of their seeds, seed corn, and special manures. Among the many exhibits are fine Mangolds of last year's growth, Webb's Imperial Swede, Grasses and Clovers in growth, and also dried specimens, cereals in the ear, and samples of grain of fine quality, comprising all the firm's Wheats, Barleys, and Oats.

Vegetable and flower seeds were well represented by examples of Cabbage, Broccoli, Radish, Lettuce, and a collection of Calceolarias. A large number of dishes of Potatoes was also staged, and included such as Stourbridge Glory and New Motor. Webbs' special manures for all crops were shown, as also were samples of the raw materials from which they are made.

THE YOUNG GARDENERS' DOMAIN.

IN THE KITCHEN GARDEN.

MUCH is required to be done in the kitchen garden, especially after the late genial showers of rain. Bush fruits, Gooseberries, and Currants, Strawberries, Figs on walls, and all stone fruits, give promise of excellent crops—except Apricots. These will be a failure in some gardens, in spite of the covering afforded them, owing to the severe weather experienced while the trees were in bloom. Wall trees will be benefited by a mulching of good farmyard manure, the nourishing properties of which will be washed down to the roots by the rain. Should the season prove dry, give thorough soakings of liquid manure or clear water through the mulching, which may be renewed once or more during the season, as it becomes exhausted. Let the removal of the old material and the application of the new be done at the same time, otherwise many valuable roots, which have been enticed to the surface, will perish, and may result in the loss of a crop of fruit.

Asparagus, Veitch's Model Broccoli, Ellam's Early Cabbage, summer Spinach, forced Carrots, Potatoes, Turnips, and Vegetable Marrows, are the chief vegetables for present use, and these will carry us on until Peas, Broad Beans, Early Erfurt, and Early London Cauliflowers come in. Veitch's Early Peas are in full bloom, with Chelsea Gem to follow. Broad Beans of the Windsor type are well advanced, and with favourable weather will soon be in full bloom. Parsnips have received their final thinning to 9 inches apart. Carrots are partially thinned, the final thinning being deferred until the young roots are fit for use, when they form an excellent dish. The continued use of the hoe between small crops greatly assists them to grow, by allowing the air to pass down to the roots; moreover, the maintenance of a loose surface tends to keep the soil moist during dry weather. The apparently simple operation of hoeing is acknowledged by the best gardeners and market growers to be work of first importance.

The last ten days have been favourable to the planting of Lettuces, Cabbages, and other plants from frames and hotbeds. Celery trenches may with advantage be formed and prepared at once by forking in them a liberal dressing of rich farmyard manure. In deeply worked ground the surface of the trenches when ready for planting may be 6 inches below the general level; if the land is shallow 2 inches suffice. For large-growing varieties the rows may be from 4½ to 5 feet apart, according to the depth of the trenches; for dwarf varieties 3 feet. The spaces between may be used for Lettuces, Radishes, or any crop which can be cleared off before the soil is required for earthing the Celery. Successional sowings of Peas at fortnightly intervals, or as soon as the plants from the previous sowing appear through the ground, maintain a regular supply.

Asparagus beds will be found to yield better produce if an application of 2 or 3 ozs. of salt, or half the quantity of nitrate of soda to the square yard be given them, to be washed-in naturally or artificially. It is desirable to cut all the heads that are large enough daily, and if not required for immediate use tie in bundles of twenty-five, and place the ends in saucers of water in any convenient place. If the heads are allowed to extend and mature early in the season the period of cutting is shortened, whereas in most gardens it is desired to prolong the supply as far as possible. The bedding of Strawberries is often deferred till the fruit changes. The litter can be much more quickly spread between the rows before the fruit trusses bend over, and it also conserves moisture, which is important when dry weather sets in early in June.—T. P.

CLEAN versus DIRTY POTS.

I HAVE waited some time in the hope that some gardener older and abler than myself would notice a remark made by Mr. Buchanan in his article on "Profitable Fruit Growing," page 364. It is as follows: "Clean pots are not necessary for healthy growth." Oh! shade of the dear old gardener with whom I was apprenticed; well is it for thee that thou didst not live to see the day when such practices were recommended in thy beloved Journal!

Mr. Buchanan goes on to say that he has "never seen any inconvenience arise from the use of dirty pots." I am but a young man, and it may seem somewhat presumptuous in me to differ from one who is probably old enough to be my father, but I must say that my experience is utterly opposed to his. On the day just closed I have been transferring Cinerarias from small into larger pots. I noticed that where the pots had not been thoroughly cleaned there was great difficulty in knocking out the ball of soil with roots intact; and from all that I have ever read or heard from gardeners of good standing, this is the general experience.

Speaking personally, I would as soon don a dirty shirt after a bath as put a healthy plant in a dirty pot. Perhaps this is owing to my youth, and I may see fit to alter my opinion on this subject as I grow older, but with all humility I trust I may never forget the good old adage, "Cleanliness is next to godliness."

If Mr. Buchanan's dictum be true, it makes one blush to think of the weary waste of time going on daily in thousands of gardens throughout the kingdom; and I add, had the various gardeners under whom I served

been of Mr. Buchanan's opinion, I should have been saved many a weary day at that back-aching job—pot-washing.

It would interest me to know what "An Old Boy" thinks of such advice as Mr. Buchanan's, because he has, in the admirable series of articles which he has from time to time contributed to the *Journal*, always insisted on the necessity of doing things thoroughly. As I said before, I may be wrong in my conclusions, but, with all due respect to Mr. Buchanan, there is nothing very thorough or workmanlike in potting plants in dirty pots.

His statement on this point reads very peculiar when compared with his advice to young men on pages 340-41. What is one to think of such sentences as these? "Get your whole heart into your work." "Have an ambition to excel." "The greater part, if not the whole of success, is made up of strict and intelligent attention to every little detail connected with the thing you wish to accomplish."

All this is excellent; but, in my humble opinion, its value is considerably discounted when taken in conjunction with the advice to use dirty pots.—A YOUNG ROSS-SHIRE GARDENER.

[We have often heard one of the most accomplished growers of specimen Heaths, and other hardwooded plants of past years, aver that he would as soon eat his dinner off a dirty plate as place in a dirty pot.]

HAMPTON COURT.

HAVING recently paid a visit to this interesting old place, perhaps others of the "Domain" would like to hear something about it. On leaving Hampton Court station a turn to the right brought us at once to the bridge over the Thames, whence a good view of the Palace is obtained; a stately pile, indeed, for it covers an area of nearly eight acres.

Entering the grounds by the Trophy Gates, within which, on the left, are the military barracks facing the courtyard, through which we passed to the Great Gate House of Wolsey's Palace. Inside the Great Hall are some of the most beautiful tapestries in the world, illustrative of Scriptural history, also the immense coloured glass windows, representing arms, badges, initials, pedigrees, English history, and other interesting matter. Ascending the King's Great Staircase we reach the State rooms and view the splendid pictures by renowned artists; the paintings on the ceilings were very attractive, and displayed great skill. Charming views of the gardens, the Thames, and the surrounding country are obtained from the windows of these rooms, and being the middle of May the Lilacs were in their full beauty, while deciduous and evergreen trees and shrubs were clothed in their summer garments. The different shades of green at this season were very noticeable. The grand old Yews presented a pleasing contrast to the light green of deciduous trees. Rhododendrons and Azalea mollis were rapidly expanding their blooms. The herbaceous borders were gay both with flowers and foliage. Spring bedding was at its best. The Chestnuts—the pride of Bushy Park adjoining—would be fully expanded in about a week from the time of this visit.

Before concluding I must mention the great Vine, which no gardener ought to miss. Here, indeed, is a giant which could not be met with elsewhere. The vinery enclosed an area of 2200 square feet. The circumference of the Vine stem is $3\frac{1}{2}$ feet, and the entire roof was evenly covered. The bunches were fully formed, and produced at regular intervals, the crop averaging 1200 bunches of about half a pound each. Everything was very neat and clean. I watched my opportunity to ask a few questions of the attendant at the door, and learned that its border was entirely outside, and extended to a wall 60 to 70 feet distant. To reach this the roots passed under a gravel walk and grass verge from 12 to 15 feet wide. The ground was kept clear of all vegetation with the exception of a few bulbs and a herbaceous border about 6 feet wide next the wall. The Vine is fed frequently with bonemeal, and is remarkably clean from all insects. The Vine is nearly 130 years old, and the glass structure has been several times renewed and enlarged during that time. No artificial heat is used. I should have liked to learn more, but other visitors claimed attention. Passing to the east and south front of the Palace, through the "Wilderness," we made our exit through the Lion Gates, having fully enjoyed and learned much in the few brief hours spent at Hampton Court.—F. L. T., *Burwood*.

BORDER POLYANTHUSES.—The past winter and spring have been most favourable for these plants. Never before have I seen them flower so strongly or so continuously. Seedling plants raised towards the end of August produced a wealth of colour and variety in the seed bed—quite an unusual experience. Judging from reports which have appeared of late, these have not been exhibited in a condition to satisfy the florist's standard; but for border furnishing and for cutting purposes the florists' ideal is not strictly necessary. For massing there are no colours more effective than the bright orange and yellow shades. Beds and borders filled with these are conspicuous even at a long distance, while the darker self and bizarre shades need to be examined more closely. All are well worthy of a larger share of patronage. Once a strain is secured, it is easy to maintain and improve the stock by selecting the best, and planting them in an isolated bed, where they may flower and mature their seed crop. Seeds sown as soon as ripe will give strong plants to prick out in the spring, which, with a summer's growth, are in first rate order for the flower garden beds in winter. For furnishing the edges of pleasure ground borders they are best put direct into their places in the spring.—R. A.



FRUIT FORCING.

Vines.—Early House.—As soon as the Grapes are cleared off the Vines give the inside borders a thorough supply of liquid manure, or a top-dressing of some fertiliser washed in. This, with adequate, but not excessive, supplies of water, will help to plump the buds and encourage root action, so essential to the activity of the laterals, which, if allowed moderate extension, is the best preventive of premature ripening of the foliage. Keep the ventilators open constantly, even in cold weather. Syringe thoroughly, to cleanse the foliage of dirt and insects, and repeat occasionally, or as found necessary, to keep the old or main leaves healthy. Fresh laterals will soon be produced, and cultivators should maintain an even growth over the Vines, pinching the gross laterals and encouraging the weak. The mulching or covering having been removed from the outside border, with just enough of the lighter part left to protect the roots, a watering with liquid manure may be given, but this will not be needed where rain in sufficient amount has recently fallen.

Second Early House.—Vines started at the New Year have the Grapes ripening where they have been brought forward gently, but when grown rapidly the crop will be ripe. Maintain a circulation of warm, rather dry, air constantly, increasing the ventilation early. Keep the floors damped on hot days, allowing the temperature to fall to 60° at night when cold, or 65° when warm, with sufficient heat in the pipes to prevent moisture condensing on the berries. If there is likely to be any want of finish allow the Vines time, by giving as long a rest at night as possible. Moderate moisture, even after the Grapes are ripe, is essential to the health of the foliage, hence damping the floors and stages must be resorted to occasionally. Allow a moderate extension of the laterals, to encourage root action, but keep gross growths in check, so as to cause an equal distribution of the sap. When ripe a minimum temperature of 60° will be sufficient.

Early Muscat Houses.—The fruit ripening will need a drier condition of the atmosphere, but avoid great aridity, or the foliage will fall a prey to red spider. Do not allow any deficiency of moisture in the borders, for Muscats are gross feeders. The supply of water to the roots will in some measure compensate for the drier condition of the atmosphere. Provide a circulation of air constantly, preventing the moisture condensing on the berries by sufficient warmth in the pipes to insure a changing atmosphere. Lateral extension is the best safeguard against shanking at this stage, along with a steady temperature. Keep the night temperature at 65° to 70°, 80° to 85° by day with a little sun, and 90° to 95° with it in full force. Ventilate early, and regulate by the sun's increase, and so with its decline. The old leaves of Muscats are liable to be scorched under powerful sun after a period of dull weather. In very bright weather draw a single thickness of tanned netting over the roof-lights, which, without impeding too much light, will prevent the scorching.

Midseason Houses.—Vines in these will be in various stages of development, according to the time of starting. Those that have stoned will be swelling the berries fast, and the borders should have a top-dressing washed in, or a supply of liquid manure, repeating with pure water or stronger food as necessary. Admit a little air constantly at the top of the house, and ventilate freely in the early part of the day, closing early with sun heat and a genial condition of the atmosphere. Fire heat will only be necessary to secure 60° to 65° at night, and 70° to 75° by day, keeping through the day at 80° to 85°, and closing sufficiently early to run up to 90° or 95°.

Grapes Stoning.—During this process the Vines should have a regular temperature of about 65° at night, and 70° to 75° by day from artificial heat if the Grapes are wanted by a given time. Admit air in good time, always a little at 70°, and dissipate moisture before the sun acts powerfully upon the foliage. Allow a moderate lateral extension, but avoid overcropping, and supply a top-dressing (washing-in) or liquid manure.

Grapes Scalding.—Muscats and Lady Downe's, with other varieties, are liable to scald in the later stages of stoning, therefore must be watched in hot bright weather, and air admitted more freely for a fortnight or three weeks, until colouring commences. Muscats are sometimes scorched when exposed to the direct rays of the sun, even after colouring has commenced, which must be provided against by a little extra ventilation, especially early; and in bright weather a slight shading. Black Hamburghs also occasionally are scorched when the berries are exposed whilst damp to the direct rays of the sun, which can mostly be avoided by a good spread of foliage, or by a bountiful supply of air by day and a little ventilation constantly at the upper part of the house, with a genial warmth in the hot-water pipes, being very particular as regards early ventilation.

Late Houses.—Late varieties of Grapes in flower must have a circulation of rather dry, warm air, and a temperature of 70° to 75° at night, rising to 85° or 90° from sun heat, as without this the thick-skinned varieties do not set well. Thin the berries freely as soon as they are set, but this, in the case of shy-setting varieties, must be confined to the removal of the smallest and imperfectly set berries in the first instance, deferring the general thinning until the properly fertilised berries can be determined by their free swelling. There must be no deficiency of moisture at the roots.

therefore afford liquid manure copiously after the Grapes are thinned and swelling, or a top-dressing may be given of some approved artificial manure, distributing it evenly on the surface, and washing it in with tepid water after the border has been duly moistened, this being done prior to the application of the fertiliser.

THE KITCHEN GARDEN.

Celery.—The plants move badly after they have become drawn by standing too closely together in boxes, frames, or beds. Carefully transplanted to the trenches or beds ere they press against each other, no perceptible check to their growth will be observable. Before moving them give a soaking of water to the roots, remove sucker growths and the smallest leaves, and replant firmly. A watering will settle the soil about the roots, and a covering of Pea stakes affords some protection against frost, cold winds, and strong sun. Late-raised plants directly they are large enough should be pricked out in nursery beds to prepare them for the trenches.

Broccoli and Brussels Sprouts.—A number of plants of Veitch's Autumn Broccoli and Brussels Sprouts put out now should produce profitable crops at a time when vegetables are becoming somewhat limited in variety. If raised thinly in seed beds they may be drawn from these and replanted with a dibbler, but in most gardens the early plants are raised under glass, pricked out on sheltered borders, and are transplanted to their final quarters with the aid of a trowel. If the rows of short-topped early or successional Potatoes have been disposed 3 feet apart, and duly moulded, these may be advantageously cropped between with early Broccoli and Brussels Sprouts, but it is a mistake to plant between stronger growing Potatoes unless the rows of these are 42 inches apart.

Ridge Cucumbers.—These succeed well during hot summer, but are liable to fail if a cold wet time is experienced in June and July. A great heap of manure is not the best position for them, as this, when decayed, becomes sodden and destructive to the roots. Late-raised plants established singly in small pots are preferable to any raised earlier. Put these out 3 feet apart on ridges prepared as for Vegetable Marrows (see below), doing this early in June. Protect carefully from cold winds, allow the plants to branch naturally, and peg down the leading growths.

Vegetable Marrows.—These are more productive grown either on ridges or dotted about on well-manured ground than on heaps of manure. For ridges, select a sunny open spot, sheltering if necessary, and mark out a space 4 feet wide and of any length, distribute 6 inches of the soil on each side, wheel into the trench a depth of 12 inches to 18 inches of hot partially decayed manure, and return the soil, with a little added from the alleys to the top of this. When the heat from the manure and sun has well warmed the soil, put out the plants in a single line through the centre and 3 feet apart. Protect with hand-lights, cloches, or other contrivances, removing those not glazed every morning. Putting out strong, late-raised plants during the last week in May or first week in June means an early crop, but good results attend the practice of sowing a few seeds on the ridges. This may be done now or a week later.

Tomatoes in Sheltered Positions.—Tomato plants are hardier than is generally supposed. Seeing also that a gain of a week or more may make all the difference between success and partial failure no time should be lost in planting. If during the first fortnight the plants do not appear to make any progress the roots will yet have made a good start, and instead of the first cluster missing to set it will most probably be saved. Any vacancies between fruit trees on south walls should be utilised for Tomato culture, and also sunny house and shed walls, fences, and temporary hoardings. A very rich root run is not good for open air Tomatoes. It causes them to grow too rankly; but the other extreme should also be avoided. Mix a little fresh loam and well decayed manure with the ordinary garden soil, and a sprinkling of some special manure. The plants should be in a moist state at the roots when turned out of their pots, and be planted firmly 12 to 15 inches apart and confined to single stems, or from 18 inches to 2 feet apart if scarce, laying in two leaders in this case. No particular varieties can be said to crop much better than others in the open: but the preference may well be given to those known to ripen early. See that the old balls of soil and roots do not become injuriously dry during the first month after planting, and if any kind of protection can be afforded that will favour early cropping.

Planting Tomatoes in the Open.—In this instance it only pays to plant varieties that produce slightly ribbed or non-cracking fruit, and which also commence ripening early. Select a sunny open breadth of ground, sloping to the south for choice, and prepare as for Potatoes; some growers planting among dwarf early sorts of the latter. Plant out late in May, or not later than the first week in June, an early start being imperative, arranging the plants 15 inches apart, in rows 3 feet asunder. Sturdy little plants out of 3-inch pots are preferable to larger ones, and these can be protected, if need be, by 6-inch pots inverted over them on frosty nights, taking the precaution to place a clod of earth over the drainage hole.

WALLFLOWERS.—The rich fragrance and beautiful display made by these plants for some time past remind one of the need for sowing seeds for the next year's uses. Some will have already done so but there is no gain in getting such forward plants—indeed, for flower garden work, which entails so much labour in lifting and replanting in the autumn, there is an all-round disadvantage in having plants so large to deal with. The month of June is quite soon enough to sow, so that there is yet time for those who have not ordered their seeds to do so for immediate use. There are many sorts to choose from, in both yellow and dark forms.—S.

THE BEE-KEEPER.

TIMELY ATTENTION.

THE importance of giving timely attention to all stocks in the apiary during the present inclement weather will be acknowledged by all bee-keepers. The much-needed rain having fallen in abundance, warm days and bright sunshine are now required for all growing crops, and will be equally welcome to the bees, as the all-important factor, the weather, combined with good management, makes all the difference between success and failure in bee-keeping.

Bee-keepers in the Midland and Northern counties escaped the severe gale which did so much damage to the bees in the South and West of England. "S. T.," writing on the 10th inst., says, "On May the 2nd the bees were flying in great numbers; the day was mild, but a high wind was blowing, which increased to a gale. The bees came homewards in thousands, but the majority of them dropped short of the alighting board and there they lay in heaps under each hive; thousands of bees must have been lost from my apiary alone. Although I have been a bee-keeper for many years I have never seen the like before. Being anxious to see how others had fared I walked two miles to see another bee-keeper who farms bees extensively; there I found the same thing had happened, and from inquiries made I find that all bee-keepers throughout this district have suffered from the same cause." Fortunately such a serious state of affairs as this does not often happen. Bees are beaten down during the prevalence of high winds and heavy thunderstorms; but if the weather is mild, and the sun comes out again, it is surprising how quickly the bees recover and are enabled to reach the hive in safety.

The same writer says, "Here we have some large wild Cherry trees in the woods, which are at the present time truly a magnificent sight. What a harvest for the bees! The fruit trees, too, in this district (the West of England) are grand, and there is every promise of abundance of fruit. Plums and Damsons have set well; Peaches and Nectarines outside will be a thin crop, Cherries grand; Pears, I think, have set well. Apples are now a mass of bloom, which, thanks to the bees and fine weather, will probably be the crop of the season." The above, being written by a close observer, is interesting to gardeners as well as bee-keepers residing in other districts, as showing the state of the crop as well as the condition of the bees in a noted fruit-growing part of the country.—AN ENGLISH BEE-KEEPER.

SWARMS—DEAD DRONES.

I AM a beginner with bees. I have two skeps, one old and the other a swarm of last year, about May 20th; a fairly good one then, I thought. I have fed them as advised in the Journal, and found them increase rapidly. I am expecting them to swarm every day. Both skeps work equally well, and I watch them a good deal at times. On 22nd I noticed ten drones pass in the hive in a minute; to-day (23rd) I saw seven and sometimes nine drones on the alighting board at one time, besides some going in and out. Is it at all unusual? Some days I pick up two and three dead drones under the hive, and once as many as eight in one day. Do you think I have any cause to be anxious at seeing so many? The old skep does not seem to have very many drones passing in and out. I do not feed them now. I am enclosing what I call drones, if I am not mistaken; there are three, and one of the workers. Could you tell me what sort they are, or what they are called by name. I might also mention that I often find very large white grubs, what would eventually be drones I should think, outside dead.—ONE IN NEED.

[The bees forwarded by "One in Need" are, as he surmises, three drones and one worker of the native brown or black bee, *Apis mellifica*. It is interesting to learn that his bees are doing well, and that they are on the point of swarming from straw skeps. It is quite a common occurrence to see the drones passing freely in and out of the hive at this season when they become crowded with bees and are on the point of swarming. One hive having more drones than the other is owing to the fact of there being more drone comb which the queen has filled with eggs. Some queens are greater drone breeders than others. In frame hives they can always be kept down within reasonable limits by using full sheets of brood foundation. Our correspondent need not be alarmed at finding dead drones outside of the hive, whether they are fully developed or in a grub state, as during a spell of cold, dull, showery weather, such as has been experienced of late, the bees will at once commence to turn the useless members (for the time being) out of the hive. They will do this, although there may be abundance of stores in the hive. If, however, worker brood is turned out it is a sign of starvation, and they should at once be supplied with stores. The 2 inches of open space round the outside of the frames in a frame hive will be better if not packed with any material before autumn. The hive will be cooler in consequence.]

TRADE CATALOGUE RECEIVED.

R. H. Bath, Ltd., Wisbech.—*Dahlias and Bedding Plants.*

TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **8. Rose Hill Road, Wandsworth, S.W.**, and **NOT** to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Seedling Gloxinia (Flora).—The flower is good, rich crimson in body colour, and clearly spotted round the edge. The variety is worthy of preservation and increase for home decoration, but is not sufficiently distinct from, and superior to, others in cultivation to possess appreciable commercial value, though it is above the average merit of seedlings.

Stopping Melons (Melon).—If by the top of the pit you mean top of the trellis it is best to allow the leading growths to extend about two-thirds across it, or on a 6-foot wide trellis 4 feet to 4 feet 6 inches, and then pinch off the end when quite small. This will throw the vigour into the laterals, and give rise to plenty of them for fruiting. The laterals may be stopped when the blossoms are fertilised one joint beyond the show for fruit. If no fruit show at the second or third joint of the laterals stop them at the third leaf, so as to cause sub-laterals and a plentiful show of flowers for setting and insuring a crop of fruit.

Chrysalis of Insect (J. C.).—The pupa appears that of the puss moth (*Dicramera vinula*), the caterpillar of which has a very singular appearance by its two tail-like appendages, and when disturbed placing itself in a fighting attitude. It constructs the very singular cocoon out of bits of bark or wood, glueing them together and forming a protection for the winter, in which it changes into pupa as forwarded. The moths usually appear at the end of May or the beginning of June. The spray, much dried, appears that of *Euphorbia cyparissias*, useful for greenery in arranging flowers in vases.

Carnation Leaves Diseased (P. J. P.).—The spots on the "grass" are the pustules of the rust fungus (*Uromyces caryophyllinus*). It first appears on the leaf or stem as a pale elevated pustule, over which the epidermis soon breaks, hanging on the edges in a ragged condition, and reveals a brown powdery mass, which consists of the reproductive spores of the fungus. These bodies (uredospores) are those by which the disease is rapidly propagated and spread. To prevent this the plants may be dusted with an advertised fungicide in powder, such as fostite, this being less objectionable than Bordeaux mixture, but both have a deleterious effect on the roots unless very carefully used. We use permanganate of potash, half ounce to a gallon of water, applying with a sponge to the affected parts, a very tedious but effective application. For spraying purposes sulphide of potassium, half ounce to a gallon of water, answers well, or it may be applied to the pustules with a sponge, afterwards spraying as a preventive. Serious infestations are beyond cure.

Propagating Hardy Azalea (W. T.).—From your description of it the variety is probably one of the innumerable Ghent Azaleas which originated by crossing the Turkish *A. pontica* with certain American species, and the intercrossing of resulting varieties. If seed ripens we should sow some in sandy peat in pots or boxes, as it is possible several plants may come true. Well chosen cuttings of the previous year's wood, 2 or 3 inches long, taken with a heel, and inserted in sand about the end of August, emit roots. They must be covered with a hand-light and kept somewhat close for about two months, and at the end of that time air should be gradually given and increased. Layers, mossed and well pegged into free gritty soil in March, produce roots, but should remain in position two years before being separated. Owing to the proneness of several varieties to canker on their own roots, they are usually increased by grafting on stocks of *A. phoenicea*, raised from cuttings and established in small pots for the purpose. They may be side grafted in a close case in spring or summer. These, under good management, make the most satisfactory plants.

Diseased Tulip Leaves (W. W.).—The leaves are affected by the spot fungus (*Botrytis galanthina*), which is rather prevalent this season on liliaceous plants, especially *Liliums*. It seldom does more than hasten the decay of the leafage of Tulips, and so far as we know does not materially affect the bulbs unless left in the ground from year to year, and even then we have not found much harm result if a dressing of quicklime be applied after the tops are cleared away. Of course it is the mycelial form that affects the bulbs and passes over from year to year by the sclerotia from which spring the final stage, called *Sclerotinia bulborum*. Burn the tops, and use quicklime slaked as a top-dressing, about $\frac{1}{2}$ lb. per square yard sufficing, pointing very lightly in.

Strawberry Leaves Scorched (Salopia).—The leaves are "scorched" through moisture having been condensed on them, and then air admitted, perhaps too late, and so freely as to cause speedy evaporation. We have known many similar cases, especially with luxuriant plants, the moisture hanging on the edges of the leaves, causing the destruction of the tissues. There is no disease; a little heat in the pipes, and a circulation of air constantly by leaving a chink for top ventilation all night, with timely attention to increasing it early in the day, being the best preventive. Such occurrences are the most prevalent after a continuance of cold, dull weather, and on a return to bright days, the precaution not having been taken to meet the changed circumstances by early ventilation.

Increasing Bulbs (Evesham Gardener).—The scales of bulbs are flattened leafstalks, and at their base are latent buds. On slicing off the end of a bulb, just above the ring from which the roots issue, some at

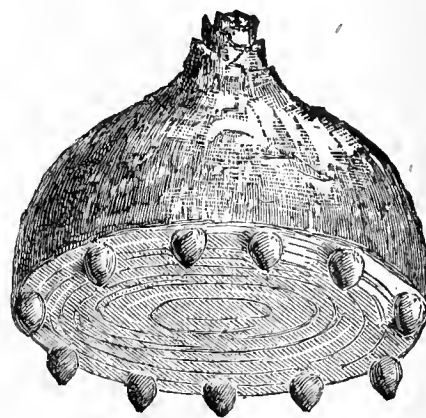


FIG. 88.
PROPAGATING HYACINTHS.

least of the parts containing such buds are brought in contact with the soil in which the bulbs are embedded, and if this is very sandy bulblets form and attain the size of large peas the first season, and develop into flowering size in three or four years. We have seen Hyacinths increased in that manner, and thousands of *Liliums* raised from scales. We have not actually seen Narcissus bulbs similarly treated, though the plan may be resorted to by experts in increasing choice and valuable varieties. In ordinary culture Narcissus bulbs are taken up every second or third year for the removal of natural offsets, this being considered better than removing the small offsets yearly.

An example of slicing and its results may be seen in the small illustration (fig. 88), but inner circles of bulblets often form, and still more when transverse cuts are also made across the base of large bulbs.

Zonal Pelargoniums to Flower in August (N. S. P.).—The plants in 5-inch pots would be the better by a shift into a larger size, affording room for a little fresh soil being pressed down all round the ball of roots. The points of the shoots may be pinched once if you wish to induce a bushy habit; but as you require cut bloom, the stronger the growths the better will be the trusses and pips, therefore you must exercise judgment in these respects. The cold frame will be much the best place for the plants, as they can be encouraged to make growth, and when coming into flower the lights will be necessary to preserve the bloom; but up to that time ventilate freely, or even remove the lights during favourable weather to induce a sturdy habit. On choosing a number of trusses timed for expansion at a certain date, top the shoots at the same joint, or do not allow more than one leaf beyond each truss. The finest trusses we have seen had no growth beyond them. As the flowers expand fully seal their petals with a drop of gum, so that all you desire may be retained in good condition for travelling. Some exhibitors thin-out some of the buds with Grape scissors for securing fine bold individual flowers, larger than Mr. Cannell's watch, and it is not a small one. All the buds chosen should not be at exactly the same stage, or they may develop a little too quickly or slowly, according to the weather. Aim at having a number of grand trusses to choose from when the show day arrives.

Sundry Plants (J. C. S.).—Cycadaceous plants are closely allied to Conifers, but *Cycas revoluta* and some other species are Palm-like in aspect, and when well grown decidedly ornamental. *C. revoluta*, a native of China and Japan, produces a beautiful arching crown of deeply cut pinnate leaves of stout texture from a short stem. In the course of years the stem elongates, but plants are not often seen in pots or tubs with clear stems more than 3 or 4 feet long. The majority are much shorter, but the plants not less ornamental. They succeed in greenhouses, but the warmer these are the quicker the growth. Soil, turfy loam made porous with sand and broken charcoal pressed down firmly, is suitable. *Elaeodendron orientale* is probably the correct name of the next plant you mention, and usually grown as *Aralia Chabrieri*, not in greenhouses, which are usually too cold in winter, but in stoves. The plant has narrow, arching, deep green leaves, is very ornamental, and grows in a mixture of peat, loam, and sand. *Ipomœa Horsfalliae*, a beautiful crimson-flowered twining plant, is a native of the East Indies, and can only be grown satisfactorily in a temperature of 70° to 85° in summer, and 60° to 65° in winter; indeed the more heat it has the better it appears to thrive. The small leafy sprays of *Magnolia* are probably *M. stellata*, syn. *M. Halleri*; but a flowering spray is necessary for positive identification.

Asters for Exhibition (A. S.).—Some of the best Asters we have seen were grown in trenches prepared as if for Celery. The buds were thinned, but not necessarily to one on each plant, as a second bud not infrequently produced a better bloom at a given date. It is most important to keep the plants free from insects by occasional dustings with tobacco powder before the florets show colour. The blooms often need protection from hot sun and drenching rains. Clear soot water and manurial mulchings are good for Asters.

Chrysanthemum Leaves Diseased (J. S.).—The leaves are diseased sure enough, but not by the rust fungus (*Uredo chrysanthemi*). Instead of that they are infested by eelworm (*Tylenchus devastatrix*), the pest living in the tissues, and causing them to become brown or black and clammy on the upper surface. The animals usually attack the stem at or about the ground level, and the plants so attacked usually go off "without cause" when 2 feet or more or less in height, this usually occurring from the middle of May to a similar time in July. The pests are generally introduced in the potting material. There is no remedy for seriously infested plants. If taken early we have found dusting with quicklime slaked with a solution of sulphate of copper, 4 ozs. to a gallon of water, using sufficient of this and no more to cause the lime to fall into an apparently dry flower. Dust this on both sides of the leaves, not using an excessive coating, but just a thin film. It appears to sink into the tissues, and have a beneficial effect in arresting the progress of the ruinous invader.

Peach Shoots Injured—Carnation "Sport" (Bryn).—We cannot find anything in the shoots of a foreign organic nature, yet the tissues appear injured by something, and some of the parts are dead. This may have arisen partly from the dressing to which you allude, but mainly from the unripe condition of the wood. It is very weak, long-jointed, and immature, hence more likely to be injured by the substance applied by means of a sponge, and much stronger than was safe under the circumstances. We can only advise cutting away the injured parts, keeping the growths clean through the summer, and in the autumn carefully lifting the tree and relaying the roots in fresh compost. The border must be in a bad condition to give such indifferent growth. It is not the result of too little, but more likely of too much moisture, and possibly sour soil. It is impossible to say whether the name of your Carnation is correct or not. Its distinctness, or otherwise, can only be determined by actual comparison with others similar in character at an exhibition of these flowers, or in a large collection. The flower has been seen by three experts, each of whom suggested a different name, and none of these the one you mention. It is not the least uncommon for exactly the same sports of different kinds of flowers to occur in sundry places and during the same year.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (R. D.).—1, *Lælia purpurata*; 2, *L. elegans*; 3, *Cypripedium Rothschildianum*, poor form. (J. L. C.).—1, *Adiantum cuneatum grandiceps*; 2, *Asplenium bulbiferum*; 3, *Nephrolepis davallioides*; 4, *Lastrea filix-mas*; 5, *Athyrium filix-femina*; 6, *Pteris serrulata cristata*. (J. C. S.).—*Magnolia stellata* syn. *Halleana*. (M. B. W.).—1, *Amelanchier botryapium*; 2, *Spiræa prunifolia flore-pleno*; 3, *Chieranthus alpinus*; 4, *Corydalis lutea*; 5, *Lycium europæum*; 6, *Heuchera sanguinea*. (W. C. S.).—1, perhaps *Zephyranthes rosea*, specimen crushed; 2, *Pyrus japonica*; 3, *Saxifraga trifurcata*.

COVENT GARDEN MARKET.—JUNE 1ST.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	0 0	to 0 0	Lemons, case ...	11 0	to 14 0
Cobs ...	0 0	0 0	St. Michael's Pines, each	2 6	5 0
Filberts, 100 lbs. ...	0 0	0 0	Strawberries ...	2 0	5 0
Grapes, lb. ...	1 6	3 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzoner, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mu-hrooms, lb. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Fuchsia ...	6 0	to 9 0
Aspidistra, doz. ...	18 0	36 0	Heliotrope, per doz. ...	6 0	9 0
Aspidistra, specimen ...	5 0	10 6	Hydrangea, per doz. ...	8 0	10 0
Calceolaria, per doz. ...	6 0	9 0	Lilium Harrisii, doz. ...	12 0	18 0
Dracæna, var., doz. ...	12 0	30 0	Lobelia, per doz. ...	4 0	6 0
Dracæna viridis, doz. ...	9 0	18 0	Lycopodiums, doz. ...	3 0	4 0
Erica Cavendishi ...	18 0	30 0	Marguerite Daisy, doz. ...	6 0	9 0
" various, per doz. ...	12 0	24 0	Mignonette, doz. ...	4 0	6 0
Euonymus, var., doz. ...	6 0	18 0	Musk, per doz. ...	2 0	6 0
Evergreens, var., doz. ...	4 0	18 0	Myrtles, doz. ...	6 0	9 0
Ferns, var., doz. ...	4 0	18 0	Palms, in var., each ...	1 0	15 0
" small, 100 ...	4 0	8 0	" specimens ...	21 0	63 0
Ficus elastica, each ...	1 0	7 0	Pelargoniums, scarlet, doz. ...	4 0	6 0
Foliage plants, var., each	1 0	5 0	" "	9 0	15 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, dozen bunches	2 0	to 4 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Arum Lilies, 12 blooms ...	3 0	4 0	Myosotis, dozen bunches ...	1 0	2 0
Asparagus, Fern, bunch ...	2 0	4 0	Narciss, dozen bunches ...	1 0	3 0
Azalea, dozen sprays ...	0 6	0 9	Orchids, var., doz. blooms	1 6	9 0
Bluebells, dozen bunches	1 0	2 0	Pelargoniums, doz. bnchs.	4 0	6 0
Bouvardias, bunch ...	0 6	0 9	Polyanthus, doz. bunches	1 0	1 6
Carnations, 12 blooms ...	1 0	3 0	Roses (indoor), doz. ...	0 6	1 6
Eucharis, doz. ...	3 0	4 0	" Red, per doz. ...	1 0	3 0
Gardenias, doz. ...	1 0	3 0	" Tea, white, dozen ...	1 0	2 0
Geranium, scarlet, dozen			" Yellow, doz (Perles)	1 0	2 0
bunches ...	4 0	6 0	" Safrane (English) doz.	1 0	2 0
Iris, dozen bunches ...	4 0	6 0	" Pink, dozen ...	3 0	5 0
Lilac (French), bunch ...	3 6	4 0	Smilax, bunch ...	2 0	3 0
Lilium longiflorum, 12 blms	3 0	4 0	Tulips, dozen bunches ...	2 0	4 0
Lily of the Valley, 12 sprays	0 6	1 0	" Parme (French),		
Maidenhair Fern, dozen			bunch ...	2 6	3 6
bunches ...	4 0	8 0	Wallflowers, doz. bnchs. ...	1 0	3 0
Marguerites, doz. bunches	1 6	2 6			



THE VALUE OF FARMYARD MANURE.

MUCH has been written and said during the last year or two to induce farmers to believe that the muck which has been looked upon by so many and for so long as their sheet anchor of fertility is of little or no practical value; nay, more, that in some cases and under some conditions it may do absolute harm. So when we consider the amount of labour bestowed upon the operations of filling, carting, and spreading manure, it seems to us an absolute necessity that we should carefully examine the evidence upon which it is being condemned, and not arrive at a rash conclusion on inconclusive data. At any rate, farmyard manure will continue to be made, whether it be valueless or not, and it will have to be made the best of, such as it is.

There seems to be no denying the fact that muck contains very valuable constituents, and as regards the least valuable of these, potash and phosphoric acid, the farmer gets nearly their full value if he gets the manure put quickly on to the land without having allowed the goodness to be washed out by rain in the yard. The same rule applies to the ammonia, which is its most valuable constituent, but in this case there is a further and greater cause of loss, and it is this that we propose to consider.

It will be remembered by old-time farmers that, thirty or forty years ago, when artificial manures were much less used than they are now, and on many a farm not an ounce was used at all, great care was taken of and much labour spent upon the dunghheap. During frosty weather in winter quantities of dung would be carted into hill in the fields; this would be required, as a rule, for the Turnip crop in June, but it would not remain quiet and undisturbed until that time; some time during the spring it would be all thoroughly turned over, every forkful would be moved. We can well remember asking the reason for this turning, and being told that the muck was better for it. No specific reason was given, and it was not until long afterwards we found that what we had

imagined was but a mechanical advantage was really a saving of nitrogen by the checking of the denitrifying action of the manure by turning. The old-time farmer knew that turning preserved the goodness of his manure, though he could not explain the reason, and he would turn his manure up in the yards in spring whether he required it for Turnips, or later on, for his Wheat.

The German chemists, Wagner and Maercker, have been conducting several series of very exhaustive experiments with the object of ascertaining the value of dung in practice. They have grown plants in large pots and applied to some of them artificial nitrogenous manures such as nitrate of soda and sulphate of ammonia, but no dung; to others they have applied dung in addition to the artificials. The results are remarkable, the nitrogen recovered in the crop being in every case less where dung was used, so that it would appear to do absolute harm. Here are the results:—

NITROGEN RECOVERED FOR EACH 100 APPLIED.

I.—WAGNER.

Manures alone.		Same Manures with Horsedung.	
Nitrate of soda	77	52	
Sulphate of ammonia	69	50	
Cattle urine	69	40	
Pasture grass	43	20	

II.—MAERCKER.

Manures alone.		Same Manures with Farmyard Manure.	
Nitrate of soda	55	35	
Sulphate of ammonia	37	31	
Cow urine	29	22	

Taken alone, Wagner's and Maercker's experiments would seem conclusive enough. On the other hand, however, Pagnoul, a French chemist, growing Mustard and grass in very large pots, tried the effect of dung upon dressings of artificial nitrogen, and found not only that the dunged pots grew no less than those with nitrate of soda only, but there was an increase due to the dung alone, so that in his trials denitrification does not seem to have taken place to any serious extent. But there was one great difference between his and the German trials, and that was in the proportion of manure to soil used, for whereas in the German 7 per cent. of manure, representing about 70 tons per acre, was used, in the French trials only 2 per cent., or twenty loads, of manure per acre was applied. This seems to suggest that there is a limit to the quantity of dung that can be profitably applied to land, and few farmers would be found who would even hint at contradicting such a conclusion.

But if reasonable quantities of manure used in pot culture can be shown to do good rather than harm, can any evidence be adduced to show that in field experiments carefully conducted the same result will be obtained? Of course field trials are apt to vary very much, but in the experiments in the growth of roots at Rothamsted, taking the average results of a series of years, we find that from mixtures of farmyard manure and artificials better and more enduring results have been obtained than from artificials alone.

Valuable as pot experiments may be, we think that we should read a little between the lines in drawing conclusions from them, for an ounce of practice is worth a pound of theory; and we want to know how best to grow crops in fields, not in pots. We all know that many plants would refuse to grow in too rich a soil, for under such conditions there is always a lack of root power. The plant that is, as it were, born with a silver spoon in its mouth, finding ample supplies of food ready at hand, does not make the root that a plant does which in poor soil has to go abroad for a living. Very little upsets the equilibrium of the pampered child of luxury, so we must not attach too much importance to trials conducted in soil containing manure at the rate of 70 tons per acre.

The fact that nitrification must take place before manures are available as plant food still remains, and the conclusions we draw are that this process had better take place in the manure hill than in the land, for in the hill nothing can be set free in the process that is not

contained in the heap, and if well turned over at a suitable time we think the loss of ammonia even here would not be great; but in the land the manure, if the German experiments are worth anything, may set free more nitrogen than it does itself contain, and therefore the land may be so much the poorer by its application, except for the small quantities of phosphate of lime and potash which it also contains.

How, then, must we use our yard muck? We must turn it well before using. If intended to be used in conjunction with nitrate of soda or sulphate of ammonia the muck must be put on some time before the artificials, and too much must not be used at one dressing; few, we think, will err in this direction as regards field culture.

WORK ON THE HOME FARM.

The weather is drier, but still very cold, and the sun seldom breaks through the clouds. The general result of the week is not hopeful. Spring corn does not grow at all, and Wheats, though still looking well, are showing signs of the attacks of rust. Weeds do not forget to make headway, and all hands are required for the hoeing, and this year Barley and Oats really need hoeing; the corn grows badly, and so gives opportunity for the weeds. Fortunate is it where Clover seeds have not been sown early, for harrowing is very beneficial this season; it not only destroys weeds, but loosens the surface soil, which has become very solid, owing to the heavy rains.

We are giving a final stirring to the Swede land; a good dragging and harrowing, and the gathering off of any little bits of twitch, will leave the land ready for ridging up and drilling. As we find Swedes quite easy to grow without muck we shall save the labour of applying it now, and reserve it for next year's Wheat or Potatoes. Bonemeal and superphosphate will, however, be very liberally given, say 7 cwt. per acre in mixture, and we shall have no doubt about securing a crop.

Pastures keep good, but stock sells badly. We have clipped our hoggets, sold some, and turned the rest among the cattle on grass. They will put on more flesh, and the markets can hardly be much worse. Fat ewes, weighing 160 lbs. carcase weight, have sold for as little as 40s., or only 3d. per lb., but the consumer will not eat solid fat, and we do not blame him for it. In fact, a nice hoggett of about 64 or 68 lbs. will fetch about the same price. It was remarked the other day at a local market that 40s. seemed to be the price of a sheep, no matter what the weight might be, and as a fact 8s. would quite cover the extremes of price.

We are still earthing our Potatoes over for fear of frost, but some are coming through the second time. They must take their chance now. Mangold have come well, and so have the weeds. The latter must be hoed out as soon as the Mangold can be clearly seen, or they will soon smother the young plants.

Cattle are doing well, and do not seem to feel the cold weather much. They have plenty to eat, which is a blessing.

Work being forward labour is plentiful, and several men are out of work.

We have washed the ewes, so trust to have warm weather for clipping next week.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1898.	May.	Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.		
			Dry.	Wet.			Max.	Min.	In Sun		On Grass
		inches	deg.	deg.		deg.	deg.	deg.	deg.	inches	
Sunday	22	29.810	57.8	52.2	N.E.	50.7	69.9	46.2	111.9	41.4	0.023
Monday	23	29.733	66.6	58.9	N.E.	51.9	75.2	46.8	118.1	40.3	0.072
Tuesday	24	29.810	57.9	54.7	N.E.	54.7	71.9	53.8	116.6	50.1	—
Wednesday	25	29.800	51.2	48.9	N.	55.1	61.2	46.9	100.9	49.9	—
Thursday	26	29.810	51.2	45.1	N.	54.1	59.4	44.9	97.2	44.8	—
Friday	27	29.985	54.4	46.2	N.E.	54.0	62.2	45.6	91.3	42.2	0.066
Saturday	28	30.058	55.0	49.5	N.	53.8	61.3	47.4	107.0	47.3	—
		29.858	56.3	50.8		53.5	65.9	47.4	106.1	45.1	0.161

REMARKS.

22nd.—Dull early, rain at 11.15 A.M., generally sunny after.
 23rd.—An almost perfect day. Cloudy evening and rain at night.
 24th.—Generally sunny, but hazy, and at times cloudy and almost threatening.
 25th.—Overcast all day, with a gleam of sun at noon.
 26th.—Overcast morning with one or two gleams of sun; faint sun generally from noon.
 27th.—Overcast and dull early, frequent faint sun from 11 A.M. to 2 P.M.; dark and threatening, with spots of rain from about 3.30 P.M. to 4.30 P.M.
 28th.—Rainy from midnight to 4 A.M., overcast morning; fine afternoon, sunny at times.
 Rather dull. Rain still small. Temperature near the average.—G. J. SYMONS.

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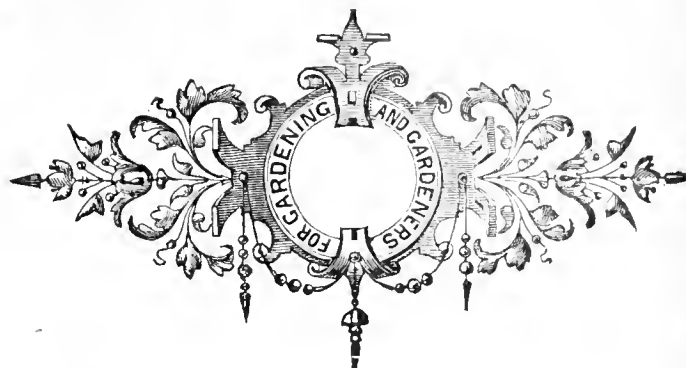
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Journal of Horticulture.

THURSDAY, JUNE 9, 1898.

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FALLACIES ABOUT SOILS.

IT seems natural that in connection with any calling there should spring up certain practices originally based upon sound principles, and which under some circumstances produced the best possible results. The success of any individual in the conduct of business worked by skilled labour, or in the culture of any plant or crop, is invariably followed by hosts of imitators, who seem to think it only necessary to imitate exactly to insure similar success. Yet as no two cases are exactly alike in all the surrounding circumstances, it so happens that a stereotyped following of old methods does not produce the great desideratum of modern times—viz., the best possible result with the least expenditure of time or money.

In applying the foregoing remarks to matters relative to horticulture, it seems to me that we have too long bound ourselves, as it were, to regulation mixtures in the matter of composts for pot plants. One of the many things which puzzled me greatly when I first began to work in a garden, was the mysterious and complicated mixtures employed for various kinds of plants. I argued the matter with myself in this way—In outdoor gardening, if we have a good loamy soil, and keep up its fertility by means of the necessary manuring, plants of infinitely different character succeed in it. Look, for instance, at the great variety of plants now employed for bedding purposes; while they are growing in pots in the houses, many persons seem to think it absolutely necessary to have good fibrous loam to grow some of them in, or peat and numerous different ingredients for others. As soon, however, as the bedding season arrives they are planted, and all share alike in the matter of soil; and it may, I think, be safely asserted that, given favourable weather and proper attention, all classes of bedding plants thrive better during their stay in the open air than while growing in pots in specially prepared soil. Here then, I think, is a wide field of thought for our reflective faculties to ponder upon.

During recent years many men have apparently considered the matter, and launched out into startling methods of procedure as a result of their

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deductions, for it is not so common a practice now as formerly to consider expensively made Vine borders necessary for the production of good Grapes, or the complicated composts of the faddist for the growth of superior plants. The market growers who, through the keen competition of modern times, have found it necessary to make every shilling go as far as possible, soon found out that their working expenses could be enormously reduced by using simple soils well stored with fertility, in preference to mixtures at one time thought essential, and which were pedantically termed "properly proportioned combinations of the elements necessary for the support of plant life." A plentiful supply of good turfy loam may be essential for the successful cultivation of many plants in pots, but I have proved conclusively that quite as good results may be obtained without it in growing the majority of softwooded kinds. Its great value lies in the fact that, as the fibre decays slowly, it gives up its elements of fertility by degrees, and is, in consequence, not quickly exhausted, and also prevents the compost becoming pasty and sour after the first year. In bygone days, when gigantic plants were more generally grown than they are at the present time, fibrous loam and peat were almost exclusively used for pot plants, doubtless because observant cultivators and successful exhibitors found that large specimens could be kept in health and vigour for a long time by using only soil of that description, hence it became the practice to use such for small as well as large plants.

When any particular practice is pursued by a successful cultivator, there is generally no lack of others ready to follow, I might say blindly, the same course, notwithstanding the fact that it may not be the most suitable one in all, or even the majority of instances. Turfy loam is really not required for plants which are kept in the same pots for a year or so, and then shaken out and repotted. I will even go farther, and say that many softwooded plants, such as Pelargoniums, Fuchsias, and Marguerites, which are intended for flowering in 5 and 6-inch pots, will grow more quickly, and prove quite as satisfactory in other respects, if good garden soil is used to pot them in. There is naturally a great difference in the texture of soils in various localities, and in preparing them for potting purposes they must be treated according to their condition. Let us take, for example, a rather strong, or, to put the matter more plainly, stiff loam. If a little lime rubble or wood ashes is added to it, as well as some partially decayed manure, it is brought into the right mechanical condition, and is rich enough to grow almost any softwooded plant well. Such a compost should be fairly dry at the time it is used for potting, and will not need pressing quite so firmly as when a lighter soil is used. A good waterer will also observe that until the roots of a plant have thoroughly permeated such a compost, watering must be done sparingly; but this is an advantage, as the less water a plant requires to keep it healthy and vigorous, the greater is the saving of labour effected.

Now let us consider the case of a good loamy garden or field soil, neither too heavy on the one hand, nor too light on the other. Such is admirably adapted for the growth of plants in pots, and often needs but little addition. In districts where such soil abounds it is often slightly deficient in lime. It is therefore obvious that a quart of lime to a barrowload of soil will make it richer in plant food. Such soils, when taken from land which has been freely manured for years, often do not need any other addition, as when the plants need stimulating food such can easily be given in the form of liquid or chemical manures. Again, in some instances the soil of the district is somewhat light, not poor, except in the sense that in dry seasons it does not retain moisture well. A load of clay kept in a shed, and pounded to powder when dry, if mixed with ten or fifteen loads of the light soil above described, will make it quite suitable for the growth of plants in pots if a little chemical manure is added; and such a compost is far cheaper than obtaining turfy loam from a distance, and, moreover, answers the purpose equally well. These are matters of vital importance in connection with commercial horticulture, as the man who can make the best use of the materials at command may often conduct business in a profitable way when others, under similar circumstances, fail, through following too closely the "beaten track."

Tomato growing has now become quite a national industry, and although under favourable conditions it is one of the most easily grown plants, yet we hear perhaps more complaints about attacks of disease, and partial failures, than in connection with any other indoor crop; but I am bold to say that there are two causes which contribute more than all others to want of success in Tomato culture; these are insufficient ventilation, and omission to plant in sweet fresh soil. The idea that the "Love Apple" requires good turfy loam to grow it to perfection is quite a fallacy. Any fresh garden soil not too rich will answer the purpose quite as well as the most complicated mixture formed by dabblers in the science of chemistry. Good growth, not too strong, is then secured, and when a fair quantity of fruit is set it is an easy matter to feed as much as is necessary with natural liquid and chemical manures. What Tomatoes abhor is to be planted year after year in the same soil; it is then only a question of time before they begin to show signs of disease or refuse to grow altogether. "Yes," but some growers on a large scale will say, "but how are we to constantly provide fresh soil for them?" The matter is simple enough where practicable—namely, secure a field near your Tomato houses, and each year remove the top spit of soil from the Tomato borders, replace it with a thickness of 8 inches from the field, and fill up the hollows thus made with the soil from the Tomato houses. The land will then continue to grow good crops of vegetables, and serious Tomato troubles will practically cease. Some cultivators might urge that such a proceeding would not pay, but as it pays to do it on a small scale, I am quite certain it may be made remunerative on a large one. Enormous sums of money have before now been wasted in carting turfy loam from a distance for Tomato growing, when plenty—which would have answered the purpose equally well—could have been obtained a few yards from where required.

The horticulture of the future must inevitably be conducted on strictly economical lines, and in the matter of soils for pot plants, Vines, and Tomatoes there is plenty of room for practising a more rigid economy. I have sufficient faith in what I write to practise it myself, and have this season planted 2000 Tomatoes in ordinary garden soil, rather lighter than I should prefer. The results promise to be a great success in every way, as heavy crops are swelling fast, and in the early houses the fruit is beginning to colour.—H. D., Leicester.

[Perhaps our able correspondent knows, though he does not say, that the interchange of soil advocated is the established practice of the most extensive growers of Cucumbers, Tomatoes, and various kinds of market plants in the kingdom; while in the production of Grapes by the ton the clever producers simply make the best of the natural soil of the site and immediate surroundings of their operations, whether the predominating factor be clay or sand. The results would astonish numbers of gardeners who have not seen them, and are altogether gratifying and encouraging.]

FLOWERS OF THE SEASON.

WITH the garden full of flowers, of dazzling or of softest gentlest beauty, it seems hard to leave it, even to take pen in hand to tell of its charms. More pleasant is it to sit or work among the flowers, delighting the while in the garden's sights and sounds. When Tulips open their cups, to be filled with the radiant sunlight; when Alyssums shine, resplendent with its glow; when hosts of flowers of all colours, with their tints brightened by its magic power, meet the eye, it requires an effort to tear ourselves from them, to put pen and ink to paper, to strive to give even a feeble idea of the beauty of the time. From the sky, dappled with fleecy clouds, none large enough or dense enough to obscure the glory of the sun, to the meanest flower which carpets the earth, all Nature seems glorified by the spirit of the season. The mountain side is green with young verdure, the belts of forest near its base vivid as at no other time. Where the streams fall over its grey rock faces, they shine like polished silver. The meadows are exquisitely green, save where spangled with Daisies or Buttercups. The young Oats have covered the fields, so short a time ago brown or black with bare earth. The very air is alive with the energy of the time. Butterfly and bee—nay, insect life of all kinds abounds, and their hum, as they fly, mingles with the song of birds.

The life of the Daffodils is nearly over for the year; their time of rest is at hand. Though we shall miss them we cannot be forlorn with the glory of the Tulips before our eyes. Very beautiful are they,

and none is of more value than some of the old cottage garden varieties which have survived years of neglect, and which need less care than many more sought after. Very showy and very beautiful as well is the old Tulip Golden Crown in its early flowering stage before the red which just margins its segments spreads until it flushes over almost all the flower. Less pointed in shape, but very beautiful, is the one named Golden Eagle, with its large self-coloured yellow flowers. Very effective is York and Lancaster, which at first is yellow and red, but afterwards passes to creamy white with large deep red blotches. Then there is Sunset, a rich coloured red and yellow Tulip, whose tints are sufficiently well indicated by the name it bears. All of these are good hardy sorts likely to give satisfaction in many gardens where the more formal if very beautiful English Tulips are not much cared for.

There are many beautiful plants among the Ranunculi, even if we leave out of our reckoning those which in past days were so popular as florists' flowers. "Past days," one says advisedly, for the florists' Ranunculus has fallen upon evil times, and the coarse flowers which pass muster at the present time would have caused pain to the old growers of fifty years ago. It is not of these, however, that one would like to speak at present, but of an old favourite of the hardy flower grower—*Ranunculus bulbosus* fl.-pl. Very beautiful are its imbricated double flowers of the finest gold, shining with a lustre as if burnished. Not fastidious as to soil, although preferring a moist one, and thriving well here on the boggy margin of a pool is this double Cuckoo Bud or Gold Cup. It is only about 6 or 8 inches high, and gives no trouble to grow.

Recently, on page 402, the Canadian *Viola canadensis* was briefly mentioned. Now another Violet presents itself—not needlessly, because there are many of the race which have, in the florist's hand, almost driven such species as these to be grown only by a few. The one now under notice is *Viola cucullata*, another North American species, and one which has been introduced for more than 130 years. We generally associate the Violet with fragrance, but as there is hardly a rule without an exception, sweet odours are not always possessed by these flowers. Of the scentless species, *V. cucullata* is one, and its claims upon us rest in its pretty violet-blue, purple, or striped flowers. The form grown in my garden is the last of these, and it pleases nearly all by its combination of white and deep violet-blue striped blooms. It did not flower for a year or two after being planted in its present position by a stone edging at the base of a rockery with an east exposure, but it has flowered annually and freely since that time. Its rather cordate leaves are dark green, and the flowers are produced on good stalks, besides being of fair size. The Hooded Violet possesses several varieties, one of which was figured in Maund's "Botanic Garden" as *V. palmensis*.

A glance at the garden shows us golden and orange Trolliuses, the golden Spanish Whin—*Genista hispanica*; the crimson and gold *Cytisus scoparius* Andreanus; the beautiful little *Cytisus Ardoini*, and others of kindred race. The tasselled Lilacs are in bloom, though may be over in the earlier South; and the Laburnums will soon be showers of gold. *Pyrus Maulei* has not yet lost its scarlet flowers, while the buds of the crimson Roses begin to show through their green envelopment. The orange cylinders of *Calampelis scabra* have begun to brighten the trellis on the outhouse gable; there is colour in the buds of *Lathyrus pubescens* by its side. Honeysuckle is budded, and the May blossom is bright with its fragrant blooms. The rock-garden and borders are gay with Sun Roses, Candytufts, Saxifrages, Aubrietias, Alyssums, Lychnises, Spanish Squills, Honesty, and many more, while Columbines hang their pretty flowers from the tops of their long stalks, and wave as the wind goes by. Irises grow plentiful, too, and Pinks are in bud, telling us of other pleasures yet to come.—S. ARNOTT.



ODONTOGLOSSUM ANDRIANÆ VENUSTUM.

VISITORS to the recent Temple Show will remember with delight the beautiful group of *Odontoglossums* sent from Belgium by Mons. L. Linden, and those of them who could get close enough would see and admire the handsome *Odontoglossum venustum*, which is depicted in the engraving (fig. 89). One flower only is shown from the long spike, and it can readily be seen how finely this *Odontoglossum* is marked. The ground colour of the flower is cream, but this was almost obscured by the bright brown spots, which spread in the greatest profusion over the upper sepal, petals, and lip. On the lower sepals the same colour took the form of bars and blotches on a cream base. It was

very much admired, and the members of the Orchid Committee expressed their appreciation by assigning to it a first-class certificate.

THUNIA MARSHALLIANA.

THE earliest flowers of this pretty species are now open, much earlier than usual. The plants carrying the flowers are about 15 inches high, have been grown in the full sun in pots about 5 inches across. Though various reasons have been assigned for *Thunias* not flowering, there is not the least doubt that the most frequent fault is growing them in hot, moist, and shady houses, and not taking sufficient care that the stems are well ripened in autumn.

It is our practice, after the flowers are past, to gradually dry the plants, and during the greater part of the summer they are kept out



FIG. 89.—ODONTOGLOSSUM ANDRIANÆ VENUSTUM.

of doors in the full sun. Sometimes they get quite blackened, and are to all appearances dead, but the more thoroughly they are baked in summer the better they flower the next season. It is a mistake, too, to allow the temperature in winter to drop unduly, and anything below 50° is bad for the plants. The stems may be all shaken quite clear of the compost, and tied in bundles of a dozen or more, these being suspended from the roof, or placed in any out of the way corner of a warm house, so that no great amount of room is taken up.

As soon as signs of growth are apparent at the base of the stems, they should be potted in equal parts of peat fibre, loam, and chopped sphagnum moss. Drain the pots carefully, and plant so that the base of the old stem just rests on the top of the compost, this latter being finished below the rim rather than above it. A neat stake should be placed to each stem, and the plants removed to their growing quarters, which cannot be too much exposed to the sun, and must be hot and moist.

When first potted little moisture is needed, as there are no roots to take it up, but directly the latter begin to run about the compost the supply must be sensibly increased. The blossoms occur on drooping spikes at the apex of growth, and are pure white with a yellow lip, this being covered with long shaggy hairs. When the flowers are partly expanded take the plants to a drier rather cooler house, the least damp settling on them being fatal to their beauty, and leading to spotting and disfigurement. It is a widely distributed plant in the Dendrobium region about Moulmein and Lower Burmah, plentiful enough to be always cheap.—H. R. R.

ORCHIDS ROUND LONDON.

ROSEFIELD—SEVENOAKS.

NOT many months ago—in fact early in the new year—the Rosefield collection of Orchids was visited, and a few jottings found a place in the Journal. Then, however, the state of affairs was vastly different from now, for with few exceptions plants only were seen, whereas on the occasion of the present visit there was a wealth of flowers amongst the *Odontoglossums*. As was noted on the occasion of the previous visit to Sevenoaks, it is of *Odontoglossum crispum* that Mr. de Barri Crawshay makes a speciality, and he grows them well. There is no forest of glass, but simply a few houses for the accommodation of the plants the owner loves so much and knows so well. They are his pets, that he tends with loving care, visiting them late at night to try and insure the precious spikes being safe from slugs, which even then occasionally become the masters of the situation.

The collection of forms of *Odontoglossum crispum* is a very comprehensive one, and amongst the plants are observable some of more than average merit. The colours ranged from pure white to white with many and with few spots of the customary varying colour, while the form and substance of some are those of the ideal *crispum*. Mr. Crawshaw is, and rightly, a great stickler for good shape, and those that are defective in this respect are certain of severe criticism from him. Happily, too, he is as strongly condemnatory of faults in his own flowers as he is in those of others, and none that shows serious blemishes on first expanding at Rosefield is retained. Thus will the quality of the varieties be improved year by year, until a standard of the greatest possible excellence has been attained to. Laws have been laid down and are observed, and they apply not only to the points just adverted to, but also to the advisability of giving names to every one. This is not done, and very properly, and it would be advantageous if indiscriminate naming amongst other plants as well as Orchids could be checked.

The exigencies of space preclude descriptions being given of any of the excellent varieties seen, for there are other plants that require and deserve a line of comment now. As regards the culture of these Orchids, the chief aim is apparently to secure a hard strong growth, this being sought for, and found, in cleanliness of the leaves and pseudo-bulbs and in a cool airy atmosphere. The result is that the colour of the foliage is deep, and shining with health, and the foliage rattles when touched with the hand. By these means the plants produce fine spikes of flowers of considerable size, though in this respect, as well as in the colouration, they obviously vary considerably, according to their age.

Amongst the several other Orchids to be seen in the same creditable condition are *Cattleya Mendeli*, of which the stock, though small, is rich in promise. Speaking of this charming Orchid reminds of an experience in repotting that was experienced at Rosefield. A small plant was procured and potted in the ordinary way on arrival, but was twice knocked over and the pot smashed. Thus it had to have fresh compost three times before the first growth was complete, and the result is the new pseudo-bulb is longer than the old, while the leaves are much larger and stouter. This points to appreciation of good food, even though it be given through unorthodox channels. The varieties of *Vanda tricolor* are very fine, some of the rarer ones being noted amidst the healthy plants. These, which are all growing in the same house, are all in splendid condition, and this remark applies with equal force to young and old, large and small, and it proves conclusively that the air of this pretty Kentish town and the treatment they receive are entirely congenial.

Turning to the *Laelias*, evidence of the same excellence of culture is readily seen, and as these again are great favourites with their owner they receive goodly attention at his hands. Some of the plants are new, while others are old; one specimen of *L. purpurata* that has been at Rosefield for just over thirteen years was at the time of this visit just producing its first spike of flowers. Perhaps ere now it has gone, and will know Sevenoaks no more, for such would assuredly be its fate if it proved a bad variety. Let us hope that after possessing his soul in patience for thirteen years Mr. Crawshaw would be richly rewarded. Then, too, were noted *L. Amesiana*, of which the Rosefield variety is such a superb one; *Odontoglossum nævium majus*, *O. polyanthum*, *Maxillaria Sanderiana*, and, growing at the warmer end of the *Odontoglossum* house, some splendid specimens of *Masdevallia towarensis*. There are others that ought to be mentioned, but we must return to London, where there is still much to see.—H. J. WRIGHT.

GROWING DIPLADENIAS.

WHETHER grown into large trained specimens for exhibition or for the decoration of the stove, these lovely climbers must always hold a foremost position amongst our choicest stove plants. If not wanted for exhibition the best plan is to fasten a trellis of wires underneath the roof of the house and at 8 or 10 inches from it. Over this the plants should be allowed to ramble freely, taking care to keep the shoots evenly and thinly disposed, so as to allow plenty of room for the proper development of the leaves and perfect ripening of the wood, which is highly essential to the free production of their flowers. Grown in this way, with some of the dark highly coloured flowers produced by *Brearleyana* and hybrid side by side, or intermingled with the delicate rosy pink ones of *D. amœna*, they present one of the most charming sights imaginable. The flowers when gathered are very attractive arranged in shallow dishes with a few fronds of *Adiantum gracillimum* forming a sort of screen over them, and if gathered in the morning when the house is coolest they remain in good condition for several days.

Dipladenias are easily propagated by means of cuttings. These will root at any time of the year, but the best time is in the spring,

and the cuttings to be preferred are the young growths from the preceding year's wood, taken off with a heel when about 3 inches long. Inserted singly in 2½-inch pots, in a mixture of half peat and half sand, and placed under a bell-glass in the hottest part of the stove, these will form roots in about a fortnight, and then must be gradually exposed to the ordinary temperature of the house. Next to these I prefer cuttings made from strong half-ripened shoots, such as may be obtained in May or June, but by rooting them in the early part of the year they get fairly started before the hottest weather comes, and perfect their growth before the winter.

To grow them well—and if not well grown they are best left alone—they require a rather high temperature when in active growth, and even in the winter when at rest they must never be subjected to a lower temperature than 50° to 55°. If wanted to flower in May they must be started early in January, but generally speaking the beginning or middle of February is soon enough. At first starting they should be given a temperature of 60° to 65° at night, with a rise of 5° by day, gradually increasing it as the days lengthen, until by the end of April it ranges from 70° to 75° at night, and from 75° to 80° by day, allowing it to rise to 85° or even 90° with sun. They delight in a moist atmosphere, and must at all times be shaded from bright sunshine, admitting at the same time as much light as possible. For this purpose the house should be provided with blinds, so that they may be rolled up and the plants exposed to the full influence of the light on every occasion when there is no sun.

The compost for *Dipladenias* should consist of three parts brown fibrous peat to two parts loam, which must be as turfy as possible, and all fine soil removed from it by sifting; to this add one-quarter part each of sand and charcoal, the latter broken to the size of acorns. A small quantity of chemical manure may be added. If really good turfy loam is not available they may be potted in all peat; on no account should poor loam, destitute of fibre, be used. The pots must be well drained, and great care exercised in watering at all seasons, few plants being more liable to injury through neglect in this respect than *Dipladenias*. During the winter especially, and before they have fairly taken to the new soil after potting, water must be cautiously applied, allowing the soil to get thoroughly dry before watering, but not to such an extent as to cause them to flag. I have seen them treated as deciduous plants, and made to lose all their foliage in the winter by keeping them dry at the roots, but such treatment is decidedly wrong; they are naturally evergreen, and must at all times be given enough water to enable them to retain some of their leaves fresh and healthy.

Almost all kinds of insects to which stove plants are subject will live on *Dipladenias*, but with proper treatment the only ones whose attacks need be feared are mealy bug and brown scale, and these—provided the plants are thoroughly cleansed before they are started in the spring—can generally be kept pretty well in check by using the syringe freely mornings and afternoons. Should they become too firmly established to be kept under by these means, syringing with petroleum will get rid of most of them.

A wineglassful to 3 gallons of water is as much as it is consistent with safety to use, as when growing freely the young leaves are very tender and easily injured. Even this quantity must be carefully applied, mixing it well with the water before syringing it over the plants, and washing it off with clean water a few minutes afterwards. Keep them well shaded for two or three days, and if properly managed no evil will result from the application, which, if necessary, may be repeated in a week or ten days. Scale may be got rid of in the same way, but being more difficult to destroy it is generally necessary to syringe the plants three or four times in succession at intervals of not less than a week.

As soon as the flower buds appear give weak liquid manure at every alternate watering; that made from fresh cow or sheep manure and diluted with clear water to the requisite strength is as good as any for them. This will greatly prolong their season of blooming, besides making the individual flowers finer in every respect. Without some such aid the trusses produced after the first flowers open will be very weak, and will have only a small quantity of buds on each; strong trusses will frequently produce as many as thirty flowers in succession, lasting over a period of nearly two months.

Any plants that are intended for exhibition should be supplied with balloon or other shaped trellises of the size they are likely to require, and the whole of the wood fastened thereto before they are started. Each young shoot when about 3 inches in length should have a string placed for it to climb on, running from the trellis to the highest part of the roof, as before mentioned, giving each shoot a fair amount of room. Comparatively small pots should be used, those 14 or 15 inches in diameter being sufficiently large for even the finest specimens. In pots of this size they may be grown year after year, turning them out just as they start into growth, and removing enough of the old soil to permit their being placed in the same pots again.—P.

NOTES ON HERBACEOUS PLANTS.

ONE is often very much interested in the notes which appear from time to time about herbaceous plants and hardy bulbs, although one is sometimes taken aback when one reads of the large numbers which some amateurs cultivate. Thus we read of hundreds of plants of *Primula rosea*, and then we think of our own little plot of two or three, and wonder whether anything we can say can be of much value or interest. But then comes the reflection, if I want to get any information for myself I look for it, not from large, but from small growers; for it is not merely that the former have these great quantities to revel in, but they have also more help, and so are able to overtake their work. Then seasons vary, and the experience of one is no guide for another; thus, for instance, this year the long-continued dry weather in spring has evidently told injuriously on some plants, which have either perished or been much crippled in their growth; and one thing has struck me very forcibly, the same character marks similar flowers all over the country. Thus I had considerable disappointment with *Iris reticulata* and its allies, but I found the same complaints were made by growers in Scotland and various parts of England.

ANEMONE PALMATA ALBA.—This has flowered very well with me this spring, and it is certainly a handsome plant. I should much like to know, however, why I am not able to manage equally successfully the type *A. palmata*. Its yellow flowers would be such a pretty contrast to the white ones that I should be glad to see them in flower together, but I never can succeed with it.

ARNEBIA ECHIOIDES.—The drought has, with me, affected this plant, for although it has grown, and is in flower, yet neither the foliage nor the flower stem is as strong as they usually are. It is a very pleasing shade of yellow, and the curious spots on the petals, which disappear after the flower has been open a few days, make it attractive, and visitors are always pleased with what is called the Prophet's Flower.

ANDROSACE SARMENTOSA.—Coming from the Himalayas, this beautiful little alpine has made large masses, which are now covered with its umbels of pretty pink flowers with white eyes. The foliage is peculiar, very silvery, and in the form of rosettes, from which shoots run out that easily take root if pegged. In winter the plant might be well taken for a Saxifrage. I see that some persons advise that it should be covered during winter with a sheet of glass, but I have never found this necessary. There is, however, another Himalayan species, *A. lanuginosa*, which, as its name implies, has very woolly foliage, and so is liable to retain the moisture and decay, and this I have always found necessary to cover over in the winter months. It is curious that one finds it much easier (at least I do) to grow these Himalayan species than our European ones, for I have never succeeded in obtaining for any time *A. carnea*, or its variety *eximia*. It is true that they are different in habit and smaller in foliage, but I have tried over and over again to keep them, and have failed.

AUBRIETIA LEICHLINI.—A large clump of this with its rosy crimson flowers has been very beautiful this spring, and is certainly the brightest, as far as I know, of this charming tribe of spring flowering plants. Its habit, too, is dwarf and vigorous, and when allowed to fall over pieces of rock forms a handsome object. There is also another vigorous bright rosy pink variety which was raised many years ago by the late Mr. Ingram of Belvoir, from whom I received it, and I am glad to retain it in my garden, not only for its intrinsic beauty, but as a memento of that good man and able gardener.

DODECATHEON MEADIA.—Why this is called the American Cowslip I have always been at a loss to understand, as its curious flowers more resemble a Cyclamen than a Cowslip. It is a lover of moist places, and hence I suppose the dry season has not suited it, for the plant which I have now had for some years is not half its usual height. It is, however, healthy, and will, I hope, recover after the heavy rains that have fallen of late.

CORYDALIS NOBILIS.—This pretty Fumitory has succeeded well, although one could hardly have expected it during this mild winter, it being a native of Siberia. It is a showy, strong-growing perennial, and deserves a place in every garden. It is rather too tall for the rockery, and is therefore better suited for the border. I do not find it at all particular as to situation or soil.

GENTIANA ACAULIS.—My experience with this lovely plant this season has been somewhat singular. I suppose that, owing to the mild winter, it bloomed rather freely in January and February, and consequently there is a scarcity of bloom now. One can hardly lay down any rule as to its position or the soil it likes, for I have seen it growing and blooming profusely in ordinary garden soil, and also in very heavy loam. I have known a garden, not at all sunny, where the borders were edged with it nearly a foot wide; the soil was a heavy loam, and anything more luxuriant than the growth or profuse than the blooming could hardly be imagined. I know also a long border fully exposed to the sun with ordinary garden soil, and here it succeeds admirably. Yet I have heard people over and over again say they could do nothing with it. That still more beautiful Alpine gem *Gentiana verna* has often been a trouble to growers of Alpine plants, yet it is a native plant, and is abundant and luxuriant in the limestone formation of the West of Ireland, where it grows from within 3 feet of sea level up to 1000 feet. I have often tried it, and often failed; but I hope my plants of it are now establishing themselves. I have planted them in the midst of *Arenaria balearica*, that charming dwarf plant with its tiny white flowers, which so soon spreads itself over the rockery. It is now showing up its flowers, and I hope it will be in bloom before the end of the month. It, of course, should not be disturbed, and this condition is somewhat like what one

has seen in the short pastures of the upper regions of the Alps, which are often thoroughly blue with its beautiful flowers.

TULIPA CORNUTA.—This is said to be a synonym of *acuminata*. It is a curious ragged-looking flower of bright colour, suited for the border, where it is always sure to attract the notice of strangers. *Tulipa retroflexa* is a very beautiful bright yellow flower, of peculiar formation. It is said by some to be a hybrid between *acuminata* and *Gesneriana*, but it bears no affinity to either of its supposed parents.

ANEMONE RANUNCULOIDES.—Much has been said of late about the beauty of this delicate little Alpine. Some persons have experienced difficulty in establishing plants, and it is one of the charms of growing herbaceous plants that one has to consult their tastes as to soil or situation to insure their growing vigorously. I have a good clump of it growing on an elevated and sunny spot on my little rockery in a light and somewhat sandy soil. It is covered with its pretty little yellow flowers dotted over its dwarf foliage. It is easily propagated, and is one of those plants which ought never to be absent from the rock garden.

PHLOX SETACEA AND NELSONI.—These form large clumps on my rockery, and are now very attractive, being covered with bloom. There are several varieties of various shades of colour, but all are attractive.

DRYAS OCTOPETALA.—This is just beginning to show its buds, and its beautiful foliage will shortly be covered with the charming white flowers. It is in a moist situation. My plant came from the West of Ireland, and has been established for some years.—D., Deal.

OBSERVATIONS IN THE HARDY FLOWER GARDEN.

THE spring garden with its flowers appeals to us with a freshness and a beauty that belong to this happy time. Its flowers are those possessing the grandeur of simplicity, seen as they are in their native habitats in bold masses. It seems to be Nature's plan to place her prostrate, low-growing plants, in broad and spreading masses, so that their pure, soft, and intense colours shall light up the landscape with beauty. It is more than strange that many of the great gardens of Britain are void of this beauty, as it should be, in bold and telling masses. True, many practise spring bedding, but this is frequently in mosaic imitations or in stars and stripes.

It is not of the flower garden proper I wish to speak, but of the filling of many corners more effectively than is frequently done. The plants I am alluding to are from their dwarfness of growth unsuitable for the herbaceous border. The subject was suggested to me by recently seeing these flowers in unrestricted masses. Mounds had been formed by huge boulders which were half-way buried in light soil and were scattered promiscuously throughout the garden. Each had one kind or variety only covering its surface.

The plants used were *Alyssum saxatile*, *Aubrietia græca*, *A. Leichlini*, *A. Campbelli*, *Saxifraga hirta*, *S. aretioides*, *S. granulata* fl.-pl., *Lithospermum prostratum*, *Arabis alba*, *A. alba* variegata, *Phlox setacea*, *P. setacea* atro-purpurea, *P. Distinction*, *Iberis corifolia*, *I. semper-virens*, and *Thymus citriodorus* foliis aureis. But language fails to describe the loveliness of the floral picture.

Before leaving this subject I should like to describe a quaint old garden in North Wales, surrounding a stately and historic house of uncertain date, whose grey stone walls were clothed with *Wistarias*, *Roses*, *Jasmines*, *Chimonanthus*, and *Magnolias*. The quadrangular flower garden had a few circular beds scattered at wide distances over the green turf, while a fountain splashed its crystal waters brought from the crags above. The flower beds were filled with "*Geraniums*" and tuberous *Begonias*, while plunged in the turf were large standard *Heliotropes* and Japanese Maples (*Acer palmatum ampelopsifolia*). Three sides of this garden were bounded by an elevated broad terrace walk, and borders on each side of the walk were planted with a choice and varied selection of herbaceous plants, intermingled with groups of hardy and half-hardy annuals. The spring flowers that I have alluded to were also here in masses, creeping over the broad stone edging, whilst in summer the fronts of the borders were enlivened by hardy annuals, sown thinly, and afterwards thinned out so as to fully develop and show off their charms.

Here waved Iceland and Shirley Poppies, *Clarkias*, *Godetias*, Sweet Sultans, Cornflowers, Corn Marigolds, *Jacobæas*, *Saponaria calabrica*, stately Hollyhocks, *Phloxes*, *Delphiniums*, *Dahlias*, *Pæonies*, *Gladioli*, *Rudbeckias*, *Helianthus*, *Coreopsis*, *Anemone japonica*, *Anthericum*, *Gesnerian Tulips*, English and Spanish *Iris*, *Campanulas*, *Alströmérias*, and clumps of Stars of Bethlehem, *Schizostylis coccinea*, and *Violas* in many colours. Here was beauty of effect, and one might gather great armfuls of flowers for room decoration without spoiling the effect.

The fourth boundary was a railing of iron, and in a border below on the opposite side were planted and trained over the railing *Clematis montana*, a wealth of starry white flowers in May; *Clematis Jackmanni*, *C. Henryi*, *C. Lord Neville* (a pure azure flower), *C. vitalba* lit up the autumn months, and the *Gloire de Dijon* Rose grew and flowered luxuriantly.

How different the effect of the terrace borders here mentioned from some that are too frequently seen, and from which scarcely a flower can be cut, planted, as they are, with straight lines—ribbon borders, as we are pleased to call them. A back row of *Suntowers* and *Dahlias*, with lines of *Perilla nankinensis*, *Ageratums*, "*Geraniums*," yellow *Calceolarias*, and *Cineraria maritima*. I do not mean to disparage these summer plants, but could not a place be found for them in the herbaceous borders, or in beds in distinct masses?—F. STREET.



WEATHER IN LONDON.—Though during the past week a considerable amount of rain has fallen, we have had the first touch of summer weather. On Thursday and Friday, with Sunday morning, we had heavy showers, but the afternoon and evening of the latter day were fine. Monday opened brilliantly, but a steady downpour came later. Tuesday was a glorious day, and Wednesday opened dull but fine.

WEATHER IN THE NORTH.—June has begun with a week of very changeable weather. Generally there has been a higher temperature, with a good deal of rain. Monday was very gloomy, and rain fell steadily nearly the whole day, but Tuesday morning was bright and extremely pleasant.—B. D., *S. Perthshire*.

ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, June 14th, in the Drill Hall, James Street, Victoria Street, Westminster, 1 to 5 P.M. This will be the first meeting, at which the Sherwood £10 10s. silver cup for annals and biennials, decoratively arranged, will be competed for. A lecture on "Hybrid Orchids" will be given by Mr. James O'Brien, V.M.H., at three o'clock.

NATIONAL DAHLIA SOCIETY.—Mr. J. F. Hudson, The Gardens, Gunnersbury House, Acton, the Hon. Secretary, favours us with a copy of the official catalogue of the Society, which is offered to non-members for 1s., plus about 1d. for postage. It is a very useful and comprehensive compilation that ought to be in the hands of every Dahlia grower, but is, perhaps, more particularly valuable to those who enter the competitive arena. All varieties worthy of inclusion are noted, with a description of the colour and the height of the plant, while at the end is an alphabetical list of varieties with the raisers and the year of introduction. Applications for copies should be made to Mr. Hudson, as above.

CYTISUS KEWENSIS.—This is one of the best additions to the list of hardy flowering shrubs which has been introduced during recent years. It originated at Kew, and is a hybrid between *C. Ardoini* and *C. albus*. It flowered for the first time four years ago, and has continued to improve until it now ranks with the showiest of the family. It is of prostrate habit, making long shoots which form a perfect mat. The flowers are of a soft sulphur colour, and are produced with such freedom as to perfectly hide the branches. For covering a bank, for a bed, used as an undergrowth—where it will get plenty of light—or planted on the rockery, it is equally effective.—W. D.

A GOOD FLAVOURED POTATO.—A great difficulty is present at this time of the year in obtaining Potatoes of good flavour. Many varieties eat well when dug, and for some time afterwards; but when kept till late in the spring their good qualities depart, and new Potatoes are welcomed because old ones will not cook. I am now testing the eating qualities of Universal, a round maincrop variety, and in comparison with other well-known sorts find it to be superior. The tubers have kept quite sound, and when boiled are of excellent flavour, mealy, and floury. The Potato-buying public are beginning to know the names of varieties of good eating qualities, and these are frequently asked for. Anyone to whom flavour in Potatoes is the first consideration will do well to give Universal a trial.—H. H. G.

WAR WITH WEEDS.—An old proverb and a very true one is "One year's seeding, seven years' weeding;" for if weeds are allowed to grow large, they require ten times the amount of labour to exterminate them than when constantly attacked and kept rooted-up whilst in a small state. I consider that to allow them to seed is a very serious error, for once allow them to get up, it is not a mere hoeing that is required, but a thorough raking and cleaning afterwards, and this is undoubtedly labour thrown away. A small amount of labour judiciously applied in this work does more towards thorough cleanliness in the garden than a vast amount at the wrong time. The Dutch hoe should be systematically and frequently used between all kinds of garden crops during the growing season, choosing bright dry weather for the operation. It is surprising the amount of ground a couple of good labourers will cover in a day. This constant persistence with all kinds of weeds, including the more noxious kinds, such as Bindweed, will eventually exterminate them entirely for the season.—H. T. M., *Stoneleigh*.

DEATH OF MR. S. SPOONER.—We regret to have to record the death, on the 3rd inst., of Mr. Stephen Spooner, of the Hounslow Nurseries, at the age of seventy-five.

THE CANTERBURY HOE.—I find the Canterbury hoe a useful tool for earthing Potatoes and other vegetables. With the soil previously loosened between the rows, two rows of Potatoes may be earthed up at one operation—that is, by working the hoe down the centre between two rows the soil is drawn on each side. In moist weather loosening the soil previously to earthing may not be necessary, and the hoe may be used in the same way as an ordinary draw hoe, but with less labour.—E. D. S.

NORTH WING OF TEMPERATE HOUSE, KEW.—From the "Kew Bulletin" we learn that the contract for the erection of this building, which will complete the whole structure in accordance with the original design of Decimus Burton in 1860, was entrusted by the First Commissioner of her Majesty's Works and Public Buildings to Messrs. Mackenzie & Moncur of Edinburgh. It is hoped that it may be completed during the present year. It is proposed to devote it to Himalayan and cool temperate New Zealand plants.

GARDENING APPOINTMENTS.—Mr. G. W. Cummins, late head gardener to A. H. Smee, Esq., The Grange, Wallington, Surrey, has been appointed by W. H. Lumsden, Esq., to a similar position at Balmedie, Aberdeenshire. Mr. Cummins is a sound gardener, and many Southern friends will regret losing his quiet and effective co-operation in charitable and other worthy objects. Mr. Samuel Weston, late foreman at Berwick, Shrewsbury, has been appointed head gardener to Colonel Wood, The Willows, Newton-le-Willows, Lancashire.

ROYAL METEOROLOGICAL SOCIETY.—At the ordinary meeting of the Society, to be held in the rooms of the Royal Astronomical Society, in the Quadrangle of Burlington House, Piccadilly, W., on Wednesday, the 15th inst., at 4.30 P.M., the following papers will be read:—"Frequency of Non-Instrumental Meteorological Phenomena in London with Different Winds from 1763 to 1897," by R. C. Mossman, F.R.S.E., F.R.Met.Soc. "Progress of the Exploration of the Air by Means of Kites at Blue Hill Observatory, Mass., U.S.A.," by A. Lawrence Rotch, M.A., F.R.Met.Soc.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—At the meetings of the Floral Committee on March 9th, April 20th, and May 11th, 1898, first-class certificates were awarded to Messrs. V. Schertzer & Sons, Haarlem, for *Primula veris acaulis cœrulea* (March 9th); to the botanical garden of Utrecht for *Cineraria Lynchi*; to Mr. Baron van Boetzelaer, Maartensdijk, for *Eulophiella Elisabethæ*; and to Mr. A. D. den Older, Leiden, for *Plantago lanceolata fol. varieg.* A certificate of merit was given to Mr. Baron van Boetzelaer, Maartensdijk, for *Stanopsis (Vanda) gigantea*.—H. C. ZWART, *Secretary*.

ISLE OF WIGHT.—The monthly meeting of the I.W. Horticultural Improvement Association was held at Newport on Saturday last. Dr. J. Groves, B.A., J.P., presided over a good attendance. Through the indisposition of Mr. F. W. Shrivell, Tonbridge, his place was taken by Messrs. S. Heaton (Hon. Sec.) and F. Midlane. The former read a short paper on "Bees," dealing with their uses, structure, natural history, and management, whilst Mr. Midlane exhibited and explained various bee-keeping appliances. For the appliances he received a certificate, as did Mr. J. E. Watts, Sunbury Gardens, Middlesex, for a patent watering-can. Votes of thanks were accorded to Messrs. T. Collister (Bembridge) and G. Williams (Gatcombe) for collections of *Aquilegias*. At Newport Nurseries Mr. A. E. Cave has a fine collection of pot Strawberries, the best being *Auguste Nicaise*, *Royal Sovereign*, and *Noble*.

THE CUCKOO AND CATERPILLARS.—I do not know whether the cuckoo is usually reckoned amongst the gardener's feathered friends, but he has been of great service to me the last two years in protecting Gooseberry and Currant bushes from the ravages of the caterpillar of the magpie moth (*Abraxas grossulariata*). The trees were badly infested and last year, frequently noticing a cuckoo in the fruit quarter, I carefully watched its movements, and to my satisfaction found it was after the caterpillar, and cleared the bushes completely of the pest. This spring my friend, or one of the same species, has returned and is carrying out the same useful work with good effect, saving a great deal of labour at a time when every minute is precious to a busy gardener. Although the cuckoo is generally a shy bird, I can approach within 10 or 12 yards of my helper without disturbing it. I should be glad to know if other gardeners have had similar experience. Henceforward the note of the cuckoo will not only be the harbinger of spring to me, but the voice of a valued friend.—W. C. STONE.

— **EARLY POTATOES.**—Mr. J. V. Leadbetter, The Gardens, Tranby Croft, Hessle, East Yorks, writes:—"Notwithstanding the unpropitious nature of the spring season, you will be astonished to hear that to-day, June 1st, I have dug over 2 lbs. of new Potatoes from the open border. For East Yorkshire this is, I think, a record accomplishment. Three kinds—viz., Sharpe's Victor, Britannia, and the new American called 'Bovee,' the latter being the best cropper, but Sharpe's Victor takes preference in point of earliness; several tubers of the latter kind measuring 2 inches in length, and 5 inches in girth."

— **CARDIFF HORTICULTURAL SOCIETY.**—We have been favoured with a schedule of the Show to be held in the Sophia Gardens, Cardiff, on July 20th and 21st. We find particulars of upwards of 120 classes, of which some are open, while others are subject to various restrictions. In several of the classes the prizes are generous, and should bring forth keen competitions from the many excellent growers in the West country and the principality. This is the tenth show of the Society, and full particulars may be had from Mr. H. Gillett, 66, Woodville Rd., Cardiff, the Secretary.

— **A FRUIT TREE PEST.**—I notice fruit trees, especially stone fruits, are being injured by a maggot, about three-eighths of an inch in length, dark brown in colour, with a black head. It attacks the tips of the tender leaves, and forms them into a bunch, thus preventing for the time extension of the shoot. The best remedy appears to be hand-picking, though this can only be carried out on a small scale in most gardens, time not allowing for a thorough examination of every tree. From the fact, however, that the shoot afterwards produces fresh growth, I am led to suppose that the enemy undergoes some change, it may be into the chrysalis state, from that to emerge into a moth later on in autumn, the moth in its turn laying its eggs deep down in the buds, to be naturally covered over as the bud develops, and thus protected during winter, hatched out the following spring. Is this so? If any able writer, such as Mr. Abbey, would kindly give the life history of this pest, and suggest preventive measures, the information would be of service.—T. P.

— **MR. PETER BARR IN NEW YORK.**—The New York Gardeners' Society met recently. One of the features of the meeting was the distribution of medals and certificates. In the absence of Mr. D. Turner, who was to be the speaker of the evening, his paper on "Lettuce Forcing" was read by Mr. R. Angus. Quite a lively discussion followed, in which Messrs. A. Herrington, W. Scott, and James W. Withers took part. Mr. Peter Barr, V.M.H., of London, who was present, also spoke, and very highly praised the black-seeded head Lettuce named *Petite Noir*, which was exclusively used by French growers for the Covent Garden Market. Other points brought out were: that Lettuce should be grown in a temperature of about 45°; that tobacco stems should not be used in fumigating, but rather tobacco dust—this last-named being more effective against insects, and less liable to injure the leaves. The system to follow, the placing small heaps of the powder on the paths, and igniting these by the aid of a tablespoonful of kerosene, and then allowing them to smoulder.—("American Gardening.")

— **THE RATING OF GLASS HOUSES.**—A meeting of the glass house owners in the Dartford Union was held at the Bull Hotel, Dartford, a few days ago, Mr. Emerson of Hextable in the chair. The Chairman said they would have been glad to have left the assessments as they were, but the Dartford Assessment Committee seemed to have formed a conclusion, he did not know upon what grounds, that the horticultural industry was a gold mine. If they had accepted the increased assessments that the Dartford Assessment Committee wanted to impose on the glass houses and nurseries it would have meant almost the annihilation of the industry. Considering the competition that now existed, and was likely to increase, with such conditions as were imposed they could not have made things meet; therefore they were compelled to take the action they did. He traced the history of the appeal, the result of which was that the assessments were reduced 63 per cent., or 8s. 6d. in the pound. This successful result had not been brought about without a great deal of expense. Mr. Ayres, Swanley Bottom, gave some particulars showing what benefit they had gained by the appeal. In the first place, it was established that all glass houses should be rated by the amount of land they covered, and the structure not taken into value. A glass house 100 feet by 12 feet had thus been reduced in net rateable value from 75s. to 42s. 6d., so that a grower having twelve houses of these dimensions would save £25 16s. in rateable value, and if the rate for the year in his parish averaged 5s. in the pound he would save £6 7s. 6d. per year. Mr. Ayres said that thus one year's savings by the appeal would cover the cost of the litigation. The Chairman suggested the formation of a Glass House Owners' and Occupiers' Association, and said he hoped those present would give it their consideration.—("South-Eastern Gazette.")

— **MAY WEATHER AT DRIFFIELD.**—Mean temperature at 9 A.M. (corrected), 51.03°; wet bulb, 47.89°; mean maximum, 55.84°; mean minimum, 40.94°; highest, 62.2° on the 22nd and 29th; lowest, 32.8° on the 15th. Mean of maxima and minima, 48.39°. Mean radiation temperature on the grass, 38.09°; lowest, 31° on the 7th and 13th. Rainfall, 2.555 inches. Number of rainy days, eighteen. Greatest amount on one day, 1.04 inch on the 20th.—W. E. LOVEL, *Observer, Driffield.*

— **SUSSEX RAINFALL.**—The total rainfall at Stonehurst, Ardingly, for the past month was 3.77 inches, being 1.82 inch above the average. The heaviest fall was 0.65 inch on the 13th. Rain fell on twenty-one days. The maximum temperature was 69° on the 22nd, the minimum 32° on the 13th. Mean maximum, 57.05°; mean minimum, 48.04°; mean temperature, 52.54°, which is 0.98° below the average. Since May came in the season has completely changed, and a little more sun would be welcomed. There has been no frost to hurt fruit, and there is promise of a full crop.—R. I.

— **THE WEATHER IN MAY AT HODSOCK PRIORY, WORKSOP, NOTTS.**—Mean temperature, 50°. Maximum in screen, 69.1° on the 23rd; minimum in screen, 32.9 on the 13th; on grass, 24.7 on the 13th. Number of frosts in shade, 0; on grass, 14. Sunshine, 144 hours, or 30 per cent. of possible duration; difference from average, - 30. Rainfall, 2.12 inches; difference from average, - 0.24. Rain fell on seventeen days. Rainfall since 1st January, 7.24 inches; difference from average, - 1.97. Month cool, especially in the daytime. No warm days, but no severe frosts. Showery, but total rainfall not quite up the average.—J. MALLENDER.

— **NEW YORK BOTANICAL GARDENS.**—We learn that these gardens are about to be enriched by the erection of a range of thirteen glass houses, which it is estimated will cover an area of 45,000 square feet. The houses will enclose a large court, which is to be utilised for the cultivation of aquatic plants. The central feature of the southern front of the range will be the large circular Palm house, which will have a diameter of 100 feet, and a height of 90 feet. The wings running east and west from this will be 30 feet wide, 116 feet long, and 26 feet high, measuring to the ridge, and they will be terminated by more roomy erections 46 feet high and 84 feet wide. The connecting houses which run south from these will be lower, measuring 30 feet in width by 75 feet in length, terminated by two domed, square houses 50 feet in diameter, and 35 feet in height. These are in their turn joined by two more low houses, each 38 feet in width and 103 feet in length. The heating apparatus will be sufficient to maintain an atmosphere of 70° Fahr. whatever the weather, and the houses are to be all well supplied with hot and cold water.

— **RAMPION.**—It is very unusual to find this grown in the vegetable garden, although in some large establishments it is occasionally inquired for. On account of the minuteness of the seeds it is no easy matter to get a good bed, especially in dry periods. It is almost as fine as the Begonia in its seeds, a fact that renders even shallow drills unnecessary, so far as the need of soil for covering is concerned. Sow seeds immediately for next winter's crop, where a demand exists, or where an addition to the list of root vegetables is favoured. Sown too early they are prone to run to seed; the plants when in bloom much resemble the taller wild forms of *Campanula*. Scatter the seeds thinly on the surface of a bed made moderately firm, and very fine, or the seeds would probably be too deeply buried to germinate. Fresh manure is best avoided, or it would have the same effect as is common to all root crops. That manured for a previous crop would be in good condition for the growth of Rampion. Choose, if possible, a showery time for sowing, and prevent the weeds from suffocating the tiny plants.—W. S.

— **DEVON AND EXETER GARDENERS' ASSOCIATION.**—The summer outing of this Society, which will, by favour of the Duke of Bedford, be Endsleigh, one of the most charming family seats in the county. The excursion will therefore be to Tavistock and Endsleigh, on Wednesday, the 6th of July. The L. and S.W. Railway have been good enough to undertake to provide saloon carriages for the party to and from Tavistock; and Mr. Squire, of the Bedford Hotel there, has arranged to drive the visitors to Endsleigh and back in brakes. The party will leave Queen Street Station at 9.5, and reach Tavistock at 10.45. Opportunity will then be taken to inspect the various interesting memorials in that historic town, and at 12.30 a light lunch will be served. The brakes will leave at one o'clock for Endsleigh, where two hours will be spent. On returning to Tavistock a substantial meat tea will be served, and the return journey be made from Tavistock, leaving at 7.55, arriving at Exeter at 9.28. Tickets to members, including railway and brake fare, light lunch and meat tea, 7s. 6d.; tickets, friends of members, 10s. All tickets must be taken by Friday, 1st July. No tickets will be issued at the station.—ANDREW HOPE, *Hon. Sec.*

ARUM LILIES.

THE cultivation of the Arum Lily is an ever-recurring topic, and at the present time pot culture as opposed to planting out during the summer months, after having been in abeyance during a quarter of a century, appears to be coming again into vogue. At least, it is not without its advocates, who find in it a cultural system adapted to their particular requirements. Pot culture has the doubtful advantage of age, for it is recommended by eighteenth century writers like Hill and Miller, by whom the Arum, or Sweet Calla, as it was then called, was treated as an evergreen tuberous plant, which, though exotic, was all but hardy.

I am inclined to think that the planting-out system brought to view the full value of the Arum as a decorative plant, as well as being the means of showing the facility with which it could be cultivated. Its very responsiveness to the most careless treatment has led to its being grown in ways that cannot be generally recommended. As an example, I have seen the plants placed almost close together, remaining in the same position the year round, the aim of the grower having been to secure the largest possible number of small spathes at the lowest cost for production. Another instance is that of a very successful grower whose plants are never in a pot at all. They are transplanted from the open in autumn into long low structures, where by regulating the temperature the grower can retard or bring them on rapidly at will. After the Easter gatherings the plants are slightly hardened, and then transferred again to the open to remain until the succeeding autumn, when the above mentioned process is repeated. Than this, I have seen no cheaper method of producing good spathes plentifully.

In private establishments where plants for furnishing as well as flowers for cutting are in constant demand during the winter months, it is impossible to employ either of the above methods. We are, in fact, practically confined either to the resting system in pots during summer, or to planting in the open for the summer months and potting in autumn. I agree that in cases where flowers and plants are not required except at some special season, say Easter, pot culture may have the advantage, as in such a case the plants can be brought slowly forward, and sturdy, well-furnished specimens, be the result. But in those cases—and I infer they are the most numerous—in which a long continued supply must be provided, then I have no doubt as to summer planting being the better system. I have adopted it for the last quarter of a century, with the result that in most years we cut in November, always in December, and the supply in spring is only stopped with the demand for the spathes.

At present our stock is being planted out for the summer. Many unopened spathes are still upon them, and would have been cut with others, only since Easter the plants have been standing in an open shed, and naturally growth has been all but at a standstill. The plants are put in ordinary garden soil, those that require dividing being split up at this time and single growths selected for potting in 6-inch pots, a size I find very useful for furnishing. If the soil is dry when planting is effected water is given them, but as genial humid weather is chosen for the work, as a rule watering is not required. The plants are left to themselves till September, when with a spade the roots are cut and the plants slightly raised. The object of this is at once to check growth in the plants, to induce a rapid development of spathes, and to produce such a condition generally, that when lifted and potted ten days later, they feel no bad effect. I am so convinced of the importance of the plants being properly prepared for lifting, that I attribute any slightly erratic behaviour in flowering to this part of the treatment having been carelessly performed. We report about the third week in September, and use small pots in comparison to the bulk of roots. Any good holding soil suits, and without sand or leaf soil. The plants are returned to the forcing houses in the second week of October, having in the meantime stood in a shaded position out of doors where, root action having commenced, it is possible to force the more forward plants at once into flower, and without doing them injury.

Owing to the many roots with which each plant is furnished I find it necessary to apply slight surface dressings weekly of some manure. The foliage as well as the flowers being of much beauty of form, plants are always in request for standing in apartments. The chief thing to guard against there is root dryness; apart from this I have never found plants seriously injured. At Christmas and Easter plants in church invariably suffer, but it is only because they cannot be watered. The spathes are highly valued for vase-filling. I prefer them arranged with no other flower, and it may here be remarked that they should only be employed when young. If short of material half-opened spathes are as valuable as those fully expanded, inasmuch as they are distinctly beautiful in themselves, and full expansion quickly takes place, while such spathes always last longer in good condition than those cut older.

With regard to the hardiness of the Arum Lily, it belongs to that exasperating class which, under certain conditions, will stand a few

winters safely. I have known the foliage pass 7° of frost without damage, and in some localities the plants thrive year after year when grown in water. It cannot, however, be depended upon, and it is better to house plants in the autumn previous to the first sharp frost, and in spring to defer planting till frost is past for the season.—R. P. BROTHERSTON.

PHLEBODIUM MAYI.

THE exhibit of Ferns from Mr. H. B. May at the Temple Show was rich in handsome forms, but amongst them all *Phlebodium Mayi* stood out as one of the most conspicuous. It is perfectly distinct from all other *Phlebodiums*, even from *glaucum*, from which in all probability it has issued. The fronds, as may be seen in the woodcut (fig. 90), are graceful, wavy in outline, and are chastely divided. They are frilled and serrated at the edges, and of a peculiar glaucous grey colour in the centre, that is extremely effective. Beyond this shade there is a broad margin of bright green, that materially enhances the beauty of the plant. The specimen staged by Mr. May was, we were informed, only about six months old, from which we should gather it is the possessor of a vigorous constitution. *P. Mayi* elicited the admiration of everyone, and is sure to become highly popular. The Floral Committee of the R.H.S. accorded a first-class certificate to the plant, an honour that was thoroughly deserved.

SPRING TRENCHING AND ITS RESULTS.

IT is a capital thing to put a theory into practice, especially if you do not believe in it. Some time ago it occurred to me that it would be an admirable idea to give Mr. David Thomson a fair trial, and far better than arguing on paper. I therefore dropped discussion and laid myself out for work. The result has been disastrous, both for my able opponent and myself—for the former, because so far as this case is concerned his arguments fail; for myself, because I have spent a good deal of money without sensibly ameliorating the soil. Just to show you what late trenching means in my case, I send you a modest chunk. There are plenty more like it. It refuses to crumble, wet or dry, and nothing but a thorough freezing will do it much good. We gave it ash, grit, and muscle. I think the junior Editor saw this land when the men were at work. One of these days I hope the senior will come along, and if he happen to have Mr. Thomson with him he will be additionally welcome. In default of helpful suggestions from them I shall pin my faith to another old veteran, of the name of Nature, next winter.—W. PEA.

[Ash, grit, and muscle are excellent for ameliorating strong land, so is frost for shattering it. The question is whether frost does not do this as effectually when the land is left undug during the winter as when it has been subjected to muscle treatment in the autumn. The sample sent resembled externally a mass of brown putty, but on breaking it we found it decidedly amenable to improvement, and under the combined influences of ash, grit, muscle, and the "old veteran—Nature"—it will form a splendid medium for growing fruit, flowers, and vegetables. There was not sufficient frost last winter to act on it beneficially in a south coast county, whether in a dug or undug state. On asking the junior Editor, who is acquainted with the district, when he should dig such land he replied, in a worldly wisdom sort of way, that he should not dig it at all, as the pen was easier to work than the spade, and paid him better. If the senior and Mr. D. Thomson should bear down on Mr. Pea during a coasting trip in the good ship "Journal of Horticulture" he would find a pair of old salts, and one of them perhaps rather a hard nut to crack. We have had in hand for some weeks the following communication. It was put aside during a period of pressure and taken off the bill of fare *pro tem.* in favour of other dainties to meet the varied tastes of a multitude of welcome guests for whom we are privileged to cater. The moment does not seem inappropriate for placing the dish of digging once more on the weekly menu.]

MR. F. DUNN (page 106, February 3rd) seems to be a rather clever man. It is not necessary to find fault with his practice of digging strong soil when it is dry (an important provision) in the autumn because it has answered with him. It has, no doubt, answered with others, but neither he nor they are competent to pose as authorities until they have tried both autumn and spring digging of such soil over a series of years, and not in one district only. If Mr. F. Dunn works in a district where the rainfall is below 25 inches or thereabouts, and he keeps off the land when it is wet, his task will be an easy one, dig whenever he may.

He is particular in saying he would not dig in midwinter, but in the autumn, while another correspondent is equally explicit in saying

(page 120, February 10th) that he would not dig in the autumn, but in winter. As a matter of principle, not to say "philosophy," which seems too much for them, both these correctors of a gardener, whose experience probably either might envy—though they may feel themselves his superior in intelligence—both these "young minds," if both are young, as one confesses himself to be, cannot possibly be right, and consequently one of them must be wrong. Mr. Dunn will say it cannot be him, because he knows from "experience," and Mr. Pea may retort that he, from experience, knows also, and knows better. If they would be content to rely on the results of their practice they would be rather strongly entrenched, but neither of them can let

make them wetter and colder? It is a recognised fact, says Mr. Dunn, that dug soil will retain more moisture than that which is allowed to remain unbroken. Then why (apart from convenience) break up retentive soil till favourable weather occurs, and the ground is wanted for use? If there has been frost, it will have been frozen even more deeply than if it were light—i.e., thrown up, roughly or otherwise; and we really cannot help it if we would. According to his own showing, then, though he does not appear to see it, the ardent young philosopher increases the wetness, and lowers the temperature of his cold wet land by digging long before the time for sowing and planting. This is because it must be so, though he does not mean it so to be



FIG. 90.—PHLEBODIUM MAYI.

the "philosophy" alone, even if they do feel it to be something of a ghost. It reminds of the moth and the candle. They whirl round it, make a dash at it, but do not put it out; on the contrary, they might get singed—just a little. Mr. Dunn cannot, for the life of him, see why frost should penetrate deeper into firm soil than loose soil. That is very likely. He is not, to coin a word, sufficiently philosophised, but it is hoped he will be some day. Really, Mr. Thomson told him, but he did not see it. He will see it when he has studied the principles of density and conduction till he, to a fair extent, comprehends them; but he must have time. He cannot deny the facts, or if he did, they would remain the same until long after he has done digging, his lump of soil or lump of self-reliance notwithstanding.

It is rather interesting to note how both these champions (each of which disclaims the methods of the other) so innocently give themselves away. What is the reason why clay soils are so unworkable in the spring, the growth so slow in them, and crops so late? Fancy asking such a question, since everybody knows, or ought to know, it is because such soils are cold and wet. If that is so, as it is, why

nor does it appear to matter very much in his particular case, though it matters very seriously where the winter rainfall is perhaps twice as great as that of which he has experience.

Then Mr. Pea says it is indubitably true that a loose body of material holds more water than one that is solid. Yes, it is. He goes on to say that water expands in freezing. It does; and, therefore, he reasons, the more water in the soil the more ice, and the more completely, in consequence, the soil is shattered. Let this also be granted; but do not at the same time forget that an equal amount of frost will convert the quite sufficient, and often too much, moisture in firmer undug soil into ice, and shatter every particle of the surrounding medium just as well, while the water will pass through it much more freely than if it were made loose by digging. The purpose is then served, the desire accomplished.

Another question then arises, and a most important one. It will, perhaps, be generally conceded that the more water there is in strong soil in the spring the more unfavourable it must be for purposes of cultivation. What becomes of the greater amount of water that must

result from the greater amount of ice in a loose than in a firm body of soil? If it were not blown out by the force of expansion, as by an explosion, it must obviously remain in till the excess can pass away, in part by filtration into the subsoil (if this be porous), in part by evaporation into the air. Out the excess must go, by one or both processes, before the temperature of the soil can be raised a single degree to fit it for the germination of seeds or the extension of roots of plants and crops.

If, as in many instances, the process of filtration is tediously slow, in some cases almost nil, what is the effect? Where the amount of water is very great, as in retentive soil made as loose as possible before the winter, we have a spring puddle. There can be no other result. We have then to trust to evaporation for dissipating the accumulation, and all the time this process is in operation the land is made, not warmer but colder. The wetter it is through the greater amount of water (melted ice) in this "loose body," the longer the chilling process must be continued. It is not until the water is extracted to the extent of admitting the air—the warm air of spring—that the temperature of the earth can be raised, and crops induced to flourish. In some seasons, sites, and localities this earth-warming is a long process, growth slow, and crops late.

In many gardens which are naturally or artificially so well drained that water can pass freely down by filtration, and where the rainfall is comparatively low, the roughing up of strong soil in the autumn or early winter, when the surface of the ground is dry but not frozen, has answered very well. Most gardeners, in view of spring emergencies, like to have as much digging and trenching done before Christmas as possible, and where the practice meets all requirements it will be continued. But there are other soils and districts in which the land is heavy, rainfall great, sunshine sparse, and springs late. Under such conditions the most successful gardeners have found by experience that they act the most wisely by letting the land alone in the autumn or winter, and work it when dry enough in the spring. Their practice is based on scientific facts, as indicated by Mr. David Thomson, and which are not likely to be overturned. Much more likely is it that the able younger men who at the moment think differently from one of the soundest scientific and practical gardeners of Britain, will be staunch defenders of his views on this important subject in the years that are to come.—EXAMINER.

THOUGHTS FOR YOUNG THINKERS.

(Continued from page 421.)

I DO not know of any higher ambition or more agreeable occupation for a man than to be a gentleman's gardener, in the widest sense and broadest application of the term; but are they aware of the unceasing effort necessary to qualify for it? We need not deplore the fact that modern masters require so much for their money, and it is useless to lament the privileges they have of being able to select from a crowd of applicants. This should stimulate a man to the best he is capable of, and young men, at least, are not aware of their capabilities; but once they feel that all things are possible to them, surely they will not barter their birthright for want of thought—because they do not at once fully grasp all the essentials necessary to success in this direction.

It is, I venture to think, worth while to place the position of a gentleman's gardener in as clear a light as possible, and it is one I have probably viewed from all angles of observation. In the first place it demands the highest talents which can be expressed by the head, hand, and eye conjointly, with the continual exercise of those virtues found in one of whom it was said—"His life was gentle, and the elements so mixed in him that Nature might stand up and say to all the world, 'This was a Man.'" Few can attain this ideal, may be said, but all who feel its force can aim for it. Those who aim at anything short of this had better bend their bows in another direction than that of being a gentleman's gardener, as I understand the term, with its concurrent responsibilities.

Ere turning to other matters I would again impress upon those in training for the post of a head gardener the importance of taking broader views of their vocation than those which existed in times of yore, with those details previously spoken of correlative to it. It is not absolutely necessary that a young man should accept all the teaching he sees in the best of gardens where he may be located as irrevocable dicta of the ethics of gardening. He should think, and the best cultivation of thought is expression. It is important that young gardeners should take pains to express their thoughts in writing with accuracy and in appropriate terms. Not in writing for publication only should they exercise care, but in private letters. It is easy for a slovenly style to settle into a firmly fixed bad habit, and prejudice a man at a critical moment in his career, as it has prejudiced many to the advantage of others who have, by striving in the direction indicated, succeeded in attaining a coveted object. As a

master over young men I have to this end invariably endeavoured to encourage them to think for themselves so far as was consistent under the circumstances, and it is gratifying to see a zest given to even humdrum work (if there is any in gardening), when a bright, intelligent youth feels the power he possesses to impress his personality upon it. Disappointments occur undoubtedly; but it is pleasant to turn to the credit side in this ledger of life and note some bright examples that have passed through one's hands now figuring not only as first-class gardeners, but men who have impressed their individuality upon good work to its advantage and their own benefit.

IN THE NURSERY.

Many of our lads love not the idea of spending a term in nursery work, with comparatively poor pay, plenty of hard work, and sundry discomforts to boot. Few, perhaps, enter one as a matter of choice. However that may be, the business methods employed, with other obvious considerations, put "grit" into a young fellow whose desire for action is the symptom of health, physical and mental. Perhaps even some head gardeners who have, perforce of circumstances, taken a spell in nursery work, have not eventually been devoid of some benefits derived from the change. Only as a youth, however, has my experience been in this direction, and four years so spent with others leads to the inference that a nursery is a capital trial ground for budding gardeners, some of whom, by not taking kindly to the work, get transplanted into other walks of life, leaving gardening—for its good.—AN OLD BOY.

(To be continued.)

SLUGS—THEIR INCREASE AND DESTRUCTION.

I HAVE hitherto accidentally overlooked "W. S.'s" kindly reference on page 430 with regard to gas lime as a slugicide. There is undoubtedly both a plethora of gardeners and of slugs, and I wish someone would suggest a cure for the former evil, but I fear the expedients from time to time put forward are something rather worse than useless, and I confess to being unequal to cope with it in any feasible manner. I can only congratulate the "in's" (who are happy), and sympathise with the "out's," who are not.

The plethora of slugs, in both field and garden, I attribute mainly to slovenly habits in so-called cultivation at the present time. Gardeners I know in many cases cannot help it, as they have not half the requisite assistance, and in such cases it is impossible that the necessary work can be done in the right manner at the right time. As to farmers, they cannot afford to employ as many hands as formerly, on account of the low prices of produce. The old-fashioned plan of "knocking the land about" had a great deal to do with its freedom from slugs. There are also many more neglected corners in gardens than formerly, and the headlands, hedgesides, and ditches are not kept in the same order on farms as they were prior to the eighties. We had in the good old days, of course, always "bad times," for I never knew a gardener or farmer worth anything who was content with present circumstances, as the best men were then, as now, always striving for better methods and more profitable crops.

I know that cultural errors and mistakes comprise the main of the evils resulting to crops by their natural enemies, and also recognise the fact that neither bad cultivation nor superior management will either give rise to a living organism, animal or vegetable, or in any wise destroy such when in possession; but the slatternly procedure, miscalled culture, favours the increase of the pests of crops to a serious extent. The root of the evil is easily traceable to the neglected corners in gardens, rubbishy headlands and hedgesides with unscoured ditches in fields. More, the greater breadths of Grasses and Clovers, and the laying down of land to permanent pasture to twice the extent of half a century ago, with the abolition of fallows, have fostered slugs in disproportion to their natural consumers, the birds, which have decreased in recent years to the prejudice of crops.

Such are my impressions of the cause of a plethora of slugs in gardens and fields. The winter, as "W. S." observes, has been favourable to slug breeding; but a slug can only deposit a certain number of eggs. Frost has little effect on slug eggs, for the animals take care to descend into the earth deep enough to be safe. The eggs, also, have such a tough integument that lime hardly does more than harden the "shell," for as applied it burns very little, and does not destroy the embryo. Adult slugs, as everyone knows, throw off lime from their bodies by the slime, and then pass on and soon don another coat; but repeat the dose, or let the dressing be such that it repeats itself at every "stride," and the slug succumbs to adverse fate—if the lime be fresh.

I am a great believer in the virtues of good lime, for when put on "hot," it burns the molluscs and profits the land. During wet weather the lime soon loses its causticity, hence it is useless to apply it then, though that is the time when slugs are most active and

destructive, and need stopping in their depredations. I have found quicklime dustings very useful, also dressings of soot. Why lime fails is because it has not been used "quick," but mild or long-slaked, and where soot fails to be useful it is because it is stale. When fresh it kills the slugs and also benefits the plants, for it then contains the essential ammonia. I have known lime water do wonders in killing slugs.

Fresh dry wood ashes act well, but when wet and leached they have little effect on molluscs, nor do they contain a material amount of potash for the benefit of crops.

The three articles are the only ones I have used regularly on growing crops. Of course there are other solutions besides:—1, Lime water, for which the lime must be fresh from the kiln, slaked in the water, and let stand after stirring well till clear. The others are 2, Ammonia water, 1 oz. of carbonate of ammonia in a gallon of water. 3, Potash water, 1 oz. of pearl ash in a gallon of water. In every case sprinkling on whilst the vermin are feeding, which is mostly when men are taking the needed rest from their labour, but care must be exercised in using the two latter, as plants, especially seedlings, vary much in hardiness.

Some persons like powders better, such as nitrate of soda, sulphate of ammonia, and kainit. All are good for crops during growth, using it very finely crushed in the evening, and not more than an ounce per square yard, and always keeping the "stuff" out of the hearts of the plants. Good guano also kills slugs and improves crops more in an all-round manner than any other hand manure, but it also burns plants if it get into the hearts of tender seedlings.

As for gas lime, no one has ever used it or seen it used who advises its employment on growing crops. It will kill slugs and such like, and either kill or injure the crops. Where it does no harm to growing crops is because the article has lain some time and become little more than gypsum, and is then of no value as a killer of pests; it will, however, profit crops to some extent by the contained lime and sulphur. Gas lime must be fresh from gas works, and used only on bare land some weeks before cropping. On very foul land I have used 5 tons per acre, 5 stones per rod, as soon as the land was cleared at the end of summer, or at any time in consequence of diseased crops. That was where Turnips fingered-and-toed, Cabbages clubbed, or Onions were destroyed, by maggot or fungus. It was spread on as evenly as possible, when the land was moist, but with a prospect of fair weather. It smells offensively for a time, and there it must lay for at least a month before digging in. Its virtue may go into the air to a great extent, but enough goes into the soil to cleanse it. It will cleanse the foulest land of the worst foes of crops, and that is something, without any prejudice to the crop in the following season.

In mild cases 3 tons per acre, or 3 stones per rod, put on when desired, always after a crop or on bare land when moist, leaving three weeks before pointing in, which is better than digging or ploughing in deeply. Even 2 tons per acre will do on not much infested land, or 2 stones per rod, and that let lie a fortnight, can be harrowed in or pointed under lightly with a fork. Or, as a preventive, 1 ton per acre, 1 stone per rod, left a week, then pointed under will do. Less I have not found of use.—G. ABBEY.

[The most certain, safe, and sure slug destroyer we have found is clear lime water, applied an hour after dark to seed beds, or whatever plants are attacked the most persistently. A few years ago a gentleman took possession of a neglected garden of clayey soil in the suburbs of London. He cleaned it, and looked forward to a feast of flowers and vegetables. But millions of slugs proved the masters. He was advised to apply lime water through rosed watering-cans to certain sections of his garden every night after dark, as if giving the ground, crops, Box edgings, and walks a good watering, and proceed till all the ground was covered. The overtime work lasted a week. "The best week's work," he said, "he ever had done." He repeated the process as required, till a slug was hard to find, and his garden gave him unbounded satisfaction.]

PENTAPTERYGIIUM SERPENS.—This rare greenhouse plant is seldom seen outside botanical gardens, though it possesses merits which warrant it a place in all gardens. It is a native of the Sikkim Himalayas, and is usually met with at an elevation varying from 3000 to 7000 feet. Occasionally it is found growing on the ground, but more often on the branches of high trees. At Kew a bushy plant, 3 to 4 feet in height, was recently in flower in the Cape house, and a number of smaller plants in the winter garden. The growths are slender, and thickly covered with dark green leaves. They spring from a curious flattened rootstock, which has the appearance of a large tuber. The flowers are bright red, with several distinct bars of a darker colour. They are almost an inch in length, and are produced along the under side of the upper half of each growth. It should be grown in sandy peat, in pots or pans, which have been nearly half filled with crocks or sandstone. Cuttings of half-ripened wood root readily if put in a close warm case. Anyone who gives this plant a trial cannot fail to be pleased with the effect produced by the graceful arching branches, with their abundant supply of pendulous flowers.—D. K.



ROSE SHOW FIXTURES IN 1898.

- June 15th (Wednesday).—York.*
 " 16th (Thursday).—Colchester.
 " 23rd (Thursday).—Bath (N.R.S.) and Ryde.
 " 25th (Saturday).—Windsor.
 " 28th (Tuesday).—Leeds,* Southampton,† Sutton, Westminster (R.H.S.), and Isle of Wight (Carisbrook). [Surrey.
 " 29th (Wednesday).—Brockham, Canterbury, Croydon, and Richmond.
 " 30th (Thursday).—Eltham, Gloucester, and Norwich.
 July 2nd (Saturday).—Crystal Palace (N.R.S.).
 " 5th (Tuesday).—Diss, Harrow, and Hereford.
 " 6th (Wednesday).—Chelmsford, Ealing, Farnham, Hanley,† Hitchin, Redhill (Reigate), and Tunbridge Wells.
 " 7th (Thursday).—Woodbridge.
 " 8th (Friday).—Ulverston.
 " 9th (Saturday).—Manchester.
 " 12th (Tuesday).—Wolverhampton.* [on-Tyne.*
 " 13th (Wednesday).—Bedford, Ipswich, Maidstone, and Newcastle.
 " 14th (Thursday).—Halifax (N.R.S.), Brentwood, Canterbury (Hospital Fund), Helensburgh, and Reading.
 " 16th (Saturday).—New Brighton.
 " 21st (Thursday).—Sidecup.
 " 26th (Tuesday).—Tibshelf.
 " 28th (Thursday).—Bedale.

* Shows lasting three days. † Shows lasting two days.

—EDWARD MAWLEY, Rosebank, Berkhamsted, Herts.

NATIONAL ROSE SOCIETY.

THE annual report of the National Rose Society has come to hand. The book comprises the Society's rules, a list of the members, as well as schedules of the three shows that are to be held respectively at Bath, the Crystal Palace, and Halifax. There is not, apparently, any material change in the classes at either of the shows, and doubtless excellent displays will be brought together. Fears are expressed that Roses will not be good at the earlier shows, but it is to be hoped that the weather during the intervening period will be more propitious, when improvement will soon be manifest in the blooms. The first of the series of shows will be held in the Sydney Gardens, Bath, on Thursday, June 23rd.

COMMENTS ON ROSES.

I MUST thank "A. C." for his note on the so-called Yellow Provence Rose in your issue for April 7th. I think I recognise "A. C." as one of our oldest and most successful amateur growers, whose presence was always a welcome sight in the past at many Rose exhibitions. But is he not mistaken—or, rather, is not Mr. Rivers mistaken—in calling *Rosa sulphurea* a Provence Rose? By the way, this Rose is named *Rosa hemisphaerica* in some botanical works, and is placed under a distinct heading from that containing *Rosa centifolia*, to which the Provence Roses belong.

Like the Rev. H. B. Biron, I was much surprised to find the N.R. Society affiliated with shows of more than one day's extension, having a distinct recollection of seeing a rule-confining affiliated societies to one-day shows only. Looking back over several reports and sets of rules, however, I do not discover it now. When it first occurred more than one of us expressed surprise and regret. But if exhibitions of miscellaneous flowers are to contain Roses to any extent, they naturally wish to be able to offer medals of our N.R.S. This, I believe, cannot be done unless the Society be affiliated, and doubtless the authorities gave way upon that account.

How very backward our Roses are this season. I have heard from several growers to this effect, many saying it is the latest season they have known. Nor can I say much for the appearance and promise of my own. They are breaking weakly, more especially so when we consider how slow their progress has been. What Colchester can do on the 16th inst. it will be interesting to see. Most of the flowers must come from under glass, as was the case at Birmingham last year, just before the Portsmouth and Isle of Wight meetings of the N.R.S. In some cases plants on walls may be useful, but if not more forward than with us, even these will not be ready to cut.

When warm weather comes we shall be attacked by insect enemies as usual. On May 18th there was an east wind, while we had at that time sharp frosts for three consecutive mornings. I do not believe in the old saying, that an east wind conveys blight, more especially in respect to green fly; but we do find these little pests more harmful at a time when our Roses are checked by such uncongenial weather. At present, wherever possible, I would keep the hoe going freely; not so much to keep down seedling weeds, as to prevent many of our insect foes from resuming active life unchecked. The sawflies will soon be coming through, and other enemies will follow. Stirring over the surface soil is a great check to the egress of these, and also gives birds a better chance to get at them. Surface cultivation assists growth, and avoids much harm from drought.—PRACTICE.

WOODHATCH.

SITUATE close to the Brighton Road, on the margin of that large open space, Earlswood Common, and about one mile from Reigate town, looking south over some exquisite scenery, and altogether one of the most charming spots in the county of Surrey, Woodhatch was, on June 8th, the scene of a brilliant wedding festivity, the only daughter of the well-known owner, T. B. Haywood, Esq., having been married to Dr. Fripp. It was largely for the purpose of seeing the floral provision made by Mr. Haywood's able gardener, Mr. C. J. Salter, that I looked in at Woodhatch a few days since.

Here can be seen a splendid collection of Orchids, such as any gentleman in the kingdom may well be proud to possess, and which reflects the highest credit on the gardener. Outdoors are thousands of Roses, H.P.'s and Teas, old and recently worked, all in excellent condition, for Mr. Haywood is a frequent and successful exhibitor; and in another direction a huge collection of Chrysanthemums, of which, now in process of placing in 10-inch pots, there has been made an addition of some fifty or sixty novelties. These are three of the primary features of Woodhatch, but far from being all, as all forms of gardening are there in evidence, and all admirably done. It is a garden in which the cosmopolitan and wide reaching nature of the ancient and modern art can be seen, for the head has to be competent with Orchids, with Roses, with Chrysanthemums, with plants and flowers of every description, with fruit culture inside and out, with vegetables indoors and out, and indeed with everything. Still, so admirably is everything presented, that having absolute oversight in every department, it is evident that Mr. Salter is an accomplished, all-round gardener. Let us glance at his work.

ORCHIDS.

Instead of being a jumble of families, as is so commonly seen, the numerous kinds are kept in separate houses, small and large, and all lean-to's, though these may not be always the best for the purpose. Still, judging by results, it is difficult to assume that other houses could be better. Seeing here so grand a lot of plants, it is a matter for regret that a group of them could not have been seen at the Temple Show. Certainly, had one been sent, it would have shown that Mr. Haywood would have played second fiddle to no others, especially that Mr. Salter favours the setting up of Orchids in groups of kinds rather than in a mixed form. The first house, a small one, looking north, is full of *Miltonia vexillaria* in great variety, the colours ranging from the pure white of Daisy Haywood to deep rosy reds. No others have, however, varietal names, as giving them seems to be uselessly overloading Orchid nomenclature.

The next house is devoted to *Odontoglossums*, chiefly *Pescatoreis* and *crispums*, small pieces, in great quantity, that will bloom freely next year. Then follows a house in which are numerous grand pieces of *Phalænopsis grandiflora*, carrying fine spikes, with several side branches, of pure white flowers of the most beautiful description. *P. amabilis*, though less pure or large, is also a lovely Orchid. The house shows in splendid form this, one of the most beautiful of all Orchids, and admirably developed. A fourth house presents a paradise of *Odontoglossums*, chiefly *crispums*, in profuse bloom, spikes of huge flowers and richest colouring standing out in wonderful profusion on both sides. The hues range from pure white to rich rosy lilac, and many of the flowers measure 4 inches across. Some have smooth edges, some are fimbriated, all are most beautiful, but some are exceptionally so. Intermingled with these are fine *Masdevallias*, such as *Veitchi*, *Harryana*, *Lindeni*, *rosea*, *igneae*, and the quaint-shaped *Schlimi*. These give lovely hues of colour, especially the rich purplish *Harryana*, the spathes of which are very fine. There is an *Oncidium macranthum* that has thrown out a spike 15 feet long, and has not yet opened a bloom. Altogether this house is indeed an Orchid bower of beauty.

Now comes a long house with a south aspect largely filled with *Cypripediums*, of which there are *Schrödera*, *Lawrenceanum*, *Rothschildianum*, *Dominianum*, *Exul*, *Mastermaniana*, *Victoria Marie*, the stems branching; and not least, a superb batch of *bellatulum* in 10-inch pans full of bloom, the flowers large, massive, and richly spotted. Rarely can a finer lot be seen anywhere. The collection comprises most of the best forms in cultivation, and many are in fine bloom. In this same house *Vandas suavis* and *teres* are in bloom, fine pieces, also *Aërides*, *Saccolabiums*, and others are here.

Then follows a similar house devoted to *Dendrobiums*, of which there is a large number of fine plants, though not now in bloom. Mr. Salter shows with pride a fine lot of seedlings in pots, many in 48's, having growths 12 inches high, and others in 60's, but all growing like weeds, and beautifully fresh and clean. Many of these it is hoped will bloom next year. The larger portion are only two years from seed. Here *Thunias Marshalli*, *alba*, and *Bensoniæ*, the former having ten spikes of flowers, are very striking.

The final house, also a long one, is full of *Cattleyas* and *Lælias*. Of the former, *Mossiæ* gives some splendid varieties; *Mendeli*, *Skinneri*, one form having a pure white throat; *gigas*, *Schrödera*, and others. *Lælia purpurata* is particularly fine, and has intensely rich coloured lips. There are several of these blooming superbly. Thus, roughly, enough has been said to show that the Woodhatch collection is a very fine one, and must have been to the wedding guests a source of wonder as of gratification. Passing many other plants grown for house decoration, for the supply of cut flowers, and all those uses to which plants are put in quantity, including *Caladiums*, notably *Gaspard Croyer*, which

has leaf colouring of blood red and is most brilliant, we pause at the following kinds:—

CANNAS.

Modern varieties of these plants are here in large variety, and finely grown; they are rapidly coming into bloom in 10-inch pots. Very fine is *Sophie Buchner* (fiery crimson), *Kaiser Wilhelm II.*, *Antoine Barton*, *Konigin Charlotte*, *Italia*, *Cheshunt Yellow*, *Austria*, *Alphonse Bouquier*, *Souvenir d'Antoine Crosy*, and others. The collection will make a brilliant show in a week or two. In this range of houses Carnations are grown in great numbers in pots, and there are still many more of them planted outdoors.

HERBACEOUS CALCEOLARIAS.

Now full with a blaze of colour is the span house, which is devoted to *Pelargoniums* in the winter. The *Calceolarias* are chiefly in 9-inch pots, the plants from 14 to 16 inches in height, and from 20 to 24 inches through. The flowers are large, variously and superbly coloured, the spotted forms being most appreciated, the foliage is good and clean. They are from seed sown in June last, and could not be excelled by any other private collection. In a frame there are a few scores of *Zonal Pelargoniums*, already in 6-inch pots, and now being so sturdy, have the points rubbed out to induce bushy formation. These, of some twenty-five varieties, will make this house a mass of glorious colour in November next and through the winter.

GLOXINIAS.

An entire house is filled with these lovely flowers, a superb strain chiefly from the firm of Messrs. Veitch & Sons. Mr. Salter has good reason to be proud of the display, for there are in it many grand varieties. Colours and markings are, as usual, very varied; but form is of the finest. Very richly coloured is *Irma*, intense scarlet; *Mrs. Donaldson*, fiery crimson; *Evalina*, blue, white margin, and others. A plant or two of *Sutton's Her Majesty* shows the finest pure white in cultivation, and is a grand companion variety to *Veitch's* fiery colours.

STREPTOCARPUSES.

These have for several years been a marked attraction here, and a lean-to house is devoted to them. There are scores of fine plants in from 6-inch to 8-inch pots profusely blooming, inclusive of pure white; also white with striped throats, lavender, blue, purple, violet, carmine, red, and maroon, all in exceeding beauty. Probably this batch of *Streptocarpus floribundus* would present a very special attraction to many persons, because they are more easily grown by the amateur than are Orchids or many other things mentioned. But whilst they attract so much admiration and are so beautiful, they further serve to show how much can be done by skilful cultivation.

ROSES.

Of these there are, as I have said, thousands. Near the house a long border is devoted to Teas, but the greater portion, and all the H.P.'s, are in the lower grounds adjoining the fruit and kitchen garden. The whole of the plants, old and new, are throwing up sturdy shoots, and promise to carry later very fine flowers. It says much for the gardener's capacity and application that he is able to enter the lists at Rose shows with the *Lindsells*, *Pembertons*, *Grahams*, and other great rosarians without discredit, yet he has a hundred other things to see to. The Dog Rose is the primary stock used, being made from cuttings. The whole of the Rose breadths, very extensive ones, are as clean as a new pin. It seems difficult to conceive of better culture, and doubtless the results are commensurate.

CHRYSANTHEMUMS.

Mr. Salter, as his successes here and there at leading shows have testified, is one of the best growers and exhibitors in Surrey, and that almost in this case means England. This leads to the remark that another first-class exhibitor, Mr. A. Mease, of Woodside, Leatherhead, is a capital rosarian also, and especially a first-rate all-round gardener. I mention this to show that the most able of Chrysanthemum growers need not necessarily be a specialist, and generally is not. The Woodhatch plants, of which there are some 600, were the other day being placed in their final pots, the plants being generally from 18 to 24 inches in height, and having sturdy hard stems. The collection will be a most interesting one to see next autumn, because of the many novelties in it, and which are certain to be well grown.

FRUIT.

Indoors there are Grapes, although not much room is devoted to them; I think not more than three houses. Peaches and Nectarines are much more largely found, the back walls of some of the cooler plant houses being so utilised, and there are great crops on *Early Admirable*, *Grosse Mignonne*, *Dymond*, and other Peaches; and *Early Rivers* (very fine), *Violet Hâtive*, *Pineapple*, and *Lord Napier Nectarines*. Some good bush Figs in pots are fruiting well, and merit a special house. Strawberries, chiefly *Royal Sovereign*, are good, so also are several varieties of Melons. Outdoors there is a large variety of Strawberries blooming profusely. Tomatoes, exclusively *Hepper's Goliath*, the plants 14 inches apart, in a wood trough 13 inches by 6 inches, standing on the stage close to the front, from a January sowing, have covered the roof and are loaded with fruit, a great portion being ripe. It is indeed a wonderful cropper.

In the open there is fair, though not exceeding promise on Apples and Pears, but Plums are thin, whilst *Morello Cherries* are wonderfully abundant. Bush fruits are not heavy crops, but *Red Currants*, as *gridiron* cordons on walls, are crowded with fruit, although the mammoth, which is probably *Red Cherry*, is practically a failure. *Cordon Goose-*

berries on walls and fences are wonderfully good also, indeed they are a marked success.

Vegetables everywhere are excellent. I should have referred earlier to Sweet Peas, which are largely grown in long boxes 6 inches wide and deep, being raised under glass, then put outdoors and staked. The tallest were the other day from 5 to 6 feet in height, and just about to bloom, others following in succession. With the roots so restricted for room, yet frequently fed with liquid manure, Sweet Peas in this way bloom finely for a long season.—A. D.

DWARF AND RUNNER KIDNEY BEANS.

A GOOD succession of Kidney Beans is indispensable in most kitchen gardens. Both Dwarf and Runner Beans require sowing in the early part of May in order to secure plants that will crop freely at the earliest period. Later sowings may be made during June, these proving useful when the early crops are becoming exhausted and there is a demand for nothing but the tenderest pods, which it should be the aim of the cultivator to supply. Dwarf French Beans should be sown every fortnight until early in July. They come quicker into bearing, but also go out sooner than Runner Beans, therefore the advantage of sowing successional will be apparent.

There are other reasons, too, why one sowing only should not be relied upon. A cold wet period may prevent germination or give a check to the young plants after they have advanced above the soil. Enemies in the shape of slugs and snails may devour them, or a sudden frost cripple them past recovery. Some cultivators take the precaution of sowing Runner Beans in boxes and planting out. This is a commendable plan in cold and late districts. Dwarf and Runner Beans require a considerable amount of heat, hence we rarely see good results from very early sowings outdoors, or before the beginning of May.

French Beans ought to be sown 4 inches apart in drills 3 inches deep and 18 inches to 2 feet asunder. The seedlings may be finally thinned to 12 inches apart should the soil be suitable and the season favourable. Failure to crop often results from the injurious crowding of the plants. When the seedlings can be distinguished above the soil loosen the top crust of the ground about them and carry out the first thinning. As growth proceeds and very dry, hot weather sets in, a mulching down each side of the rows will help to retain moisture, but water freely also during continued dry weather, especially in light soil. Stimulants may be given when pods form, but not before.

The bearing capabilities of the Beans may be prolonged by carefully gathering all the pods as they become large enough. If allowed to become old and stringy the pods rob the plants of much support, while at the same time they are useless for edible purposes. Runner Beans may be sown in single or double rows, 5 to 8 feet distance between the rows. Accord similar treatment as for Dwarfs in the early stages, but before the plants begin to twine, the stakes for their support must be fixed. Smooth, straight, well-pointed sticks about 7 or 8 feet long are the best. To double rows a line of sticks must be fixed to each row. The upper ends of the sticks may be drawn together, crossed, and firmly secured.

If sown in single rows the line of sticks may be placed upright, and braced together with suitable horizontal lengths run along the centre, the whole finally made secure with a few very strong stakes driven down diagonally. Tie with strong cord or pliable wire. It is important that the sticks be made very firm before the bine takes possession, as it would be difficult afterwards to do this, and in the meantime strong winds might blow the whole of them down.

Mulch the plants in dry weather, so that as much moisture as possible will be conserved. If necessary to water, apply copious soakings only. The most important time when adequate moisture in the soil is required is when the plants are showing their first blooms. Carefully gather the pods as they become ready, nothing being gained by allowing mature pods to hang on the plants. When the height of the stakes is reached the plants ought to be topped; topping, however, being less necessary with long sticks than with short stakes 3 or 4 feet high.—E. D. S.

PERTH, WEST AUSTRALIA. — By a letter from this township of a far distant colony, we learn that on the 27th of April last the first Chrysanthemum show there was held. The writer states that "not more than sixty blooms were exhibited, and out of that number only about twelve or so were worth looking at. Still it is a beginning, and in an out-of-the-way place like this any improvement is acceptable." No doubt readers of the *Journal* will smile at the suggestion of sixty blooms being regarded as a "show." It is a rather smaller beginning than we are accustomed to in Old England, but knowing how marvellously towns in the colonies develop, Perth, having made a start, may in a few years have a big Chrysanthemum show. Then the writer refers to prices charged for fruit, which seem to us, especially that we get at this time of the year Australian Apples so cheap and good, as somewhat high. Possibly out there the consumers in the populous towns and European countries get all the best, whilst the local people are left without. "Fruit is as dear as ever. Apples from 6d. to 1s. per lb., Grapes 1s. 6d. ditto, Pears 1s. 4d. ditto, Apricots 2d. each, Peaches not purchasable, Potatoes £24 per ton. There is a fortune here for gardeners and fruit growers. If I understood it I should go in for it. Land is dirt cheap, even good; 160 acres can be had for the asking, or at a nominal price." Here is an opportunity for some of our experienced men who at home are vainly seeking employment. Evidently a little capital and a good deal of energy with practical knowledge will help to build up a fortune in Western Australia, but I am too old to go, and hence remain—AN ENGLANDER.

PIMELEA ELEGANS.

MOST of the Pimeleas are useful greenhouse plants, easily grown, free flowering, and of graceful habit, all recommendations of great value. *Pimelea elegans* (fig. 91) is one of the most distinct species, and is deservedly a favourite with many cultivators, as its large heads of creamy white, or occasionally nearly pure white flowers, are produced so abundantly that the plant is ornamental in no ordinary degree. Small specimens in 60 or 48-size pots flower very freely, and this is an especially useful character, as such plants are always in request for conservatory and greenhouse decoration. A moderately light compost of turfy loam and peat with a little sand is most suitable for this as well as the majority of other Pimeleas, and with good drainage water can be supplied liberally whilst growth is advancing. It flowers during the spring months and continues for a considerable time. *Pimelea elegans* is propagated by cuttings of the young shoots, inserting them in moist sand.



FIG. 91.—PIMELEA ELEGANS.

under a bell-glass, and subsequently repotting into the compost previously recommended. The woodcut represents a small branch with a flower of about the natural size. This we trust will be of service to others as well as to "Journeyman."

THE YOUNG GARDENERS' DOMAIN.

THYRSACANTHUS RUTILANS.

THYRSACANTHUS *rutilans* is a stove plant. Few gardeners grow it successfully, and on that account, I believe, it is neglected. It belongs to the order Acanthaceae, and is a native of New Grenada. It is extremely useful for table decoration. The bright scarlet flowers are borne on long drooping spikes, which are produced in midwinter. The plant is worthy of more attention than is usually bestowed upon it. The plants which have come under my notice in several places have been miserable, with a few leaves on the top of lanky stems, looking half starved, and infested with some insect pest, the reason, I think, being that the plants had been subjected to much more heat than was necessary.

When well grown *Thyrsacanthus rutilans* is one of our most charming plants, and is effective in any position. It requires to be grown under much cooler treatment than is usually given to stove plants. It will then make strong healthy growth with leaves down to the pot, and consequently resist much easier the ravages of insect pests.

Well chosen cuttings inserted in small pots about the beginning of

May, root freely in a moderately heated propagating frame. Care must be taken to shade them from bright sunshine, as if they droop at all it checks them considerably, besides helping to destroy the lower foliage. When well rooted the young plants should be shifted into large or small 60's, and when well established gradually hardened, and placed in a house or pit with a temperature of about 55°. After they have well filled their pots with roots, give a final shift into 5 or 6-inch pots, according to the size most useful to the individual grower. They should not be allowed to become root-bound before this is done, as it will cause them to start into flower before they are required.

After the final pots have become full of roots liberal supplies of water are required, and a little soot given occasionally improves the appearance of the foliage. The compost I have seen employed successfully was a mixture of good loam, leaf soil, and well decomposed manure in equal proportion, with a free sprinkling of sand. If the plants are grown for table decoration it is advisable to stop them twice during the season: if, on the other hand, they are intended for ornamenting the conservatory or flower house, they will be found more useful if allowed to grow naturally.—S. S.

THE KITCHEN GARDEN.

"SEMPER," on page 378, April 28th, writes under the above heading, and displays a lamentable conception of the utility of so important a section of horticultural practice—that of outdoor vegetable and fruit culture. Woe for the future fame of British gardeners if all had "Semper's" contracted experience. Does he intend to hug the glass houses till, by age, he deems himself fit for head-gardenship? Scotch lads would feel somewhat insulted if his article applied to them, but happily it cannot.

Scotch gardeners enjoy the reputation of being the best in the world, and the reason must now be apparent to Southerners. Young Scotch gardeners are practically trained in the outdoor section of garden work, plus experience in glass houses. If it were otherwise they would feel like tradesmen who have but half learned their business.

How confined must be the views and reasonings of purely glass house gardeners. Note what "Semper" says:—"By taking a turn round the garden each evening we shall obtain a thorough insight into kitchen gardening." "Thorough!" Could we be masons or joiners worthy of the name by each evening making inspection of a day's work? What of soil surface dustings, which are raked in previous to seed sowing, as preventives of insect attacks? In laying Box edging, what of the methods in securing proper levels and reforming inequalities? Perhaps the opportunity may not have occurred whereby such men as "Semper" could obtain experience in this department, but "where there's a will there's a way." Our faith in the chances of women gardeners is now strengthened.—A YOUNG SCOT.

TO "T. P." AND FELLOW CRAFTSMEN.

As one of the gold penmen, I wish to thank "T. P." and others for their congratulations, of which I have received many. I need hardly say how much I prize the pen, and the Editor's letter accompanying it. "T. P.'s" observations respecting the unsuccessful contributors, and his review of young men's work and studies, have set me thinking. I agree with him that recreation is necessary, but let us be moderate. If we are as eager to rise at 4 A.M. to thin Grapes as some young fellows are for a morning swim, no harm will be done. I have no patience with those who excuse themselves because they cannot write a short article on gardening. If they cannot do this, they cannot write a letter properly, and men who cannot do this in these days are lightly regarded. They should learn.

I am well aware that in many places work is heavy, and the young gardener finds little leisure. I also believe—with that worthy contributor, Mr. D. Buchanan—in the old adage, "Where's there's a will there's a way." There are many I daresay who contribute to the "Domain" at a greater disadvantage than those "T. P." mentions. I am acquainted with one who not only works hard all day, but is to be seen doing anything that is pressing in his own time. This young gardener has the bothy to keep clean and cook his food in his own time, and yet he finds time for the creditable use of the pen. It is not surprising that he gets through so much work, for his motto is "Dogged." Men who can write an intelligent letter, and who are not afraid of work, but who glory in it, no matter of what kind, are the men to make their mark in gardening, not those who are adepts at picking a "winner" or scoring a "century."

We are constantly hearing about men who by sheer hard work, perseverance, and strict attention to duty gain for themselves good and responsible positions. Why not let us follow their example? First of all have an aim. Resolve to do our duty, and work hard and well. Never heed the sluggards and dandies who may poke fun at us. We have ourselves to blame if we do not pass them in the race of life. Dogged perseverance will sooner or later win for us a coveted position. Let us not worry if we do not receive praise for our work, but be content if no complaints are made. Read all we can relating to our calling. Make copious notes on anything that may be useful later on. Be methodical. "One thing at a time, and that done well, is a very good maxim, as many can tell." During periods of pressure let us be the first to offer to work overtime. If we have a real love for our work no task will seem hard, but pleasurable. Let us show that gardening is not likely to "decay," through the next generation being wanting in energy or intelligence.

And now a word to intending and unsuccessful contributors. Follow the rules laid down for "Domain" writers in every particular. They will be found in the *Journal of Horticulture*, December 31st, 1896. A copy can be had for 3½d., and every young gardener should obtain and preserve

it. Keep your MS. clean. Express yourself in the simplest language possible. Do not be discouraged if you cannot write an article straight off, but write and rewrite, revise and re-arrange until you are satisfied it is creditable. Keep a copy of all MS. sent in, so that if you have made mistakes you will then see how to avoid them in your ensuing composition.—NIL DESPERANDUM.

[Very good counsel, but it should be remembered that some contributions are shortened, not because of imperfections, but to adapt them to available space. At the same time, some free penmen are prone to indulge in a redundancy of words. The "rules" alluded to should be carefully studied.]

GO AHEAD, BOYS!

I HAVE been inspired to write a few words to the "Domain," and if my attempt is a poor one I shall, no doubt, have a chance to improve. In my opinion, men who constantly strive for excellence, educationally and professionally, are the most likely to reach the "top of the tree" in gardening. Of course some must fail, but that only teaches others a lesson. Go ahead, boys! and leave no stone unturned to attain the height of your ambition. Do not be disheartened by the wails of some who have not done so well as we would wish. Take my advice, keep going ahead, and if you fail, then you will have the consolation of having done your duty; if you hang back because of so-called poor prospects you are sure to fail. Some are pining because our old aristocracy are not so well able to keep up gardens as formerly; but I venture to think the merchant princes of Britain are more than making amends for the unfortunate falling off indicated. Neither premiums nor examinations will exterminate the "go-ahead" man; he usually comes to stay.—J. G. W.

UNSUITABLE COMMUNICATIONS.

WHILE generally the contributions to this column are highly creditable to the writers of them, we still receive several that cannot be inserted. Those written on both sides of the paper are wholly inadmissible, while some are too closely written for revision, including one from "Multum in Parvo." The writer of the only letter we have in hand from North Wales must not take it amiss on being informed that he has chosen a subject which very few experienced men can treat satisfactorily, and it will be better for himself and others if he confine himself to records of experience in practical work. It is difficult to find room for articles in this column which exceed 500 words. It would be mutually advantageous if our promising young scribes would as nearly as possible follow the advice that is given in our issue of December 31st, 1896. See the remarks of "Nil Desperandum."



HARDY FRUIT GARDEN.

Outdoor Figs.—Attend to Figs growing freely, disposing new growths thinly, and rubbing or cutting off those shoots which are superfluous, owing to want of space. Shoots are laid in now with a view to their bearing fruit next season. If well exposed to light and air the leaves will have a good chance of doing their work, and the wood must become gradually matured. The growths of this season's bearing shoots must be allowed to extend several leaves beyond the fruits before stopping. The current year's wood requires no stopping, but abundance of space to develop. Growth starting from old wood in various parts of the trees are not usually required for laying in, being of a coarse sappy character. They ought to be rubbed off early if they appear.

Strawberries.—One of the best stimulants for Strawberries at the present time is liquid manure, applying it round the plants over the mulching, which it is assumed has been placed between the rows of all fruiting plants. The production of runners must be regulated, thinning out the weakest, and preventing overcrowding, especially if it is necessary to propagate new stock shortly. All the runners should be removed from young plants which are not fruiting this season.

Currants.—Red and White Currants have grown sufficiently, so that the side shoots may be stopped at the third joint. The operation will reduce the foliage and admit light and air, benefiting the basal buds as well as the developing racemes of fruit. Currants appreciate mulchings of rich manure and frequent soakings of sewage when a liberal crop is hanging, as the roots are actively appropriating food from the soil. Black Currants are best left alone as regards pruning, but a mulch over the roots and liquid nourishment are of great benefit to the fruit.

Plums and Cherries.—Vacant spaces, if any, should be filled with vigorous young growths laid in at full length. Superfluous foreright shoots may be shortened at the third full-sized leaf, this encouraging the formation of spurs. As the growths of young trees extend, lay in the shoots at the required distance, but avoid overcrowding. Insects may be kept in check by frequent syringing, either with clear water forcibly applied with the syringe or garden engine, or a prepared solution of soft-soap, quassia chips, or Gishurst compound. Severe attacks of aphides often indicate that the soil about the roots is not in a moist condition.

Apricots, Peaches, and Nectarines.—Continue to lay in successional shoots, selected from the base of the fruiting wood or other suitable

positions. Allow a continuation of growth above the fruit on bearing shoots to attract sap thereto, but pinch at the third leaf, and resulting growths afterwards at the first leaf. Foreright shoots, which are neither well placed for laying in nor desirable to retain to form spurs by shortening to the third leaf, may be cut out entirely.

Outdoor Vines.—Reduce the number of shoots for which room is not available. Some eyes push two growths; one must be discarded, choosing the weaker, or that which is fruitless. Also remove any others which may be unsuitably placed. Shoots which have advanced in length must be carefully tied in position. Stop all that are ready two joints beyond the bunches of fruit. Bare spaces may be filled by allowing suitable growths to extend until the limit is reached, when they should be stopped. Pinch the resulting growths at the first leaf. Allow only one bunch on each shoot.

Gooseberries and Currants on Walls—When trained on walls or trellises as upright cordons the side growths will require to be pinched back to two pairs of leaves, and as soon as the lower pairs have attained full size; the operation may be carried out at short intervals. Where the number of growths is likely to cause overcrowding the weakest may be cut out, including those growing towards the wall. If the cordons have not reached the limit of space, train in the leading growths at full length.

Should the soil become dry, as it is likely to do at the base of walls, a copious watering will act beneficially, not only in affording assistance to the fruit swelling, but in preventing the attacks of insects, red spider being prevalent in many instances, also green and black fly. Following the applications of clear water liquid manure may be freely used to well-cropped trees. A liberal mulching of some material, preferably manure, over the roots, will greatly assist in retaining the moisture, rendering watering less frequently necessary.

Training Newly Planted Trees.—Under favourable conditions newly planted trees will now make new wood freely. With those on walls the growths must be regulated and secured as they extend, giving each branch and shoot liberal space. Trees and bushes in the open require attention more in the way of cutting out unsuitable growths, so that the best situated may have full scope to develop. Gross shoots should be rubbed or cut out, only retaining wood of medium strength for permanent furnishing.

FRUIT FORCING.

Figs.—*Early Forced Trees.*—When the first crops are gathered generous treatment will be needed to enable the trees to swell the second. Syringe twice a day to keep red spider in check, and afford liquid manure when watering is necessary. The second crop should be thinned before the fruit is the size of Walnuts, and in doing so reserve the largest fruits at the base of the shoots. Mulch trees in pots with rich material.

Succession Houses.—When the fruit commences ripening a free circulation of warm dry air should be afforded, which is essential to high quality, not less so being the tying-in and regulating of the shoots by thinning and stopping, so as to afford the fruit the benefit of all the light possible. The moisture in the atmosphere will need to be moderated, not wetting the fruit.

Young Trees in Pots for Next Year's Early Forcing.—The trees must not be neglected, or disappointment is inevitable. They must have all the light possible, and be kept as near the glass as practicable without touching, so as to secure sturdy, well-ripened growths, keeping these clean by syringing. The growth being completed the trees may be stood outdoors to induce rest, but the wood must be well ripened previously.

Peaches and Nectarines.—*Earliest House.*—When the fruit is all gathered from individual trees, the wood on which it has been produced should be cut away to the shoot at the base, which is to afford the bearing wood for next season. All growths not absolutely necessary for bearing next season, or for the extension of the trees, must be removed, as it is important the foliage be fully exposed to light and air. Employ the syringe freely, keep the inside borders well watered, and the outside border must not be neglected if the weather be dry. Admit all the air possible, and when the buds are plump, and the wood thoroughly ripened, the roof-lights, where movable, may be taken off.

Trees Ripening their Fruit.—Syringing must cease directly the fruit commences to soften for ripening. Do not allow the soil to become dry, but supply water as required. A mulching of short spent material is very useful in preventing the surface cracking and the roots going down in quest of moisture. Ventilate freely, leaving a little air on constantly, and to insure the preservation of the foliage in good health sprinkle the paths, borders, and similar surfaces in the morning and afternoon. Some netting suspended beneath the trees is useful to prevent falling fruits being bruised. In gathering the fruit great care is necessary, as slight pressure is sufficient to spoil the appearance. Gather fruit for packing before it is quite ripe.

Trees Swelling their Fruit.—After the fruit has stoned, and takes the last swelling, give every attention to the trees in watering with liquid manure, or, when the soil is moist, supply a fertilising top-dressing. A mulching of short spent manure will keep the surface moist and encourage the roots there. The shoots should be allowed to extend, not pinching the laterals in too closely, but they must be prevented shading the fruit, which should be raised with its apex to the fullest light.

Continue forcible syringings in the morning and afternoon until the fruit begins ripening, but never allow the border and other surfaces to become parchingly dry. The foregoing applies to trees that have been brought forward gently since January, and in consequence will ripen their fruit a month later than those started at the same time and brought forward as rapidly as is consistent with ripening their crops.

Trees started in January.—The fruit having made satisfactory progress is now stoning, having attained a good size. To continue the fruit in steady progress and insure its stoning satisfactorily there must be no deficiency of moisture at the roots, and the foliage must be kept clean by daily syringings. Continue the temperature at 60° to 65° artificially, with a free circulation of air allowed between 70° and 75°, having it full when the latter is reached, and close at 75°, with plenty of atmospheric moisture. If the temperature rise to 80° or 85° it will not do any harm, but admit a little air after nightfall, so as to allow pent-up moisture to escape, and the temperature to gradually cool through the night. Commence increasing the ventilation with the advancing heat from 65°.

Late Houses.—If it is desired to retard the fruit in any of these, it is best effected by a freer and more lengthened ventilation during the day and even at night when mild. It is necessary not to overburden the trees with more fruit in the early stages of growth than can remain for the crop, therefore thin well, but judiciously. Keep the trees well syringed, and mulch lightly, so as to keep the surface moist, giving thorough applications of water when necessary, and if the trees are weak or heavily burdened with fruit afford top-dressings or liquid manure.

THE BEE-KEEPER.

THE WEATHER.

THE past month has not been favourable for bee-keeping. The many changes and the low temperature, which on several occasions kept the bees confined to their hive, have been against them. There were twenty-one rainy days, and 2.21 inches rainfall was registered. The present outlook is dull and gloomy, and with the advent of June cold showers of sleet, hail, and rain are of frequent occurrence; a low temperature, too, prevents the bees obtaining sufficient for their daily requirements.

It is therefore not surprising to hear of various stocks actually dying from starvation. A bee-keeper, who keeps numerous stocks of bees in straw skeps, says, "During the past few weeks I have lost five stocks of bees. During early spring they appeared to be strong in bees, and as the winter had been mild no further notice was taken of them, but after being confined to their hives for a few days I observed a great number of live bees on the floor board so weak that they were unable to crawl back into their hive. On turning up the skeps I found the remaining bees all in the same state, and absolutely without food." We advised hot bricks to be placed round the skep, and the whole covered up warm; the bees would then cluster into the combs, be sprinkled with thin warm syrup, which they would at once take, and if fed regularly would eventually develop into a strong colony. The above came under our personal inspection, and illustrates the necessity of keeping all stocks supplied with stores during inclement weather, at whatever season it may come.

PREPARING FOR A SURPLUS.

It is impossible to predict with any degree of certainty as to the amount of surplus likely to be obtained during the coming season; but whether little or much is secured, the same preparations have to be made beforehand. It is from fruit trees, field Beans, and field flowers we generally obtain our first surplus of honey, and as, has been so often explained, unless the stocks are strong and crowded with bees, there will be only sufficient stored for their daily requirements. But if the colonies intended for honey production are full to overflowing with bees they will store a surplus on the first favourable occasion. This fact should always be kept in mind, and it is encouraging to receive confirmation of what is being done in various parts of the country by readers of the *Journal*. One writes, "All my stocks are strong and in capital condition, and something will have to be done to prevent them swarming; and as I do not wish to make any increase in numbers I am getting my supers ready, which will all be placed on the hives before the middle of the month. As there is such a wealth of flowers in all directions I anticipate an early crop of honey." As the writer of the above resides in an early district we hope his anticipations will be realised.

ENLARGING THE BROOD NEST.

The state of the weather and the condition of the stocks must be taken into consideration before the brood nest is interfered with. If the weather is warm and there is a prospect of its continuing, an extra frame of fully drawn out comb or foundation may be given them in advance of their requirements. The bees will at once commence cleaning it out. If the combs have been used before, or if the foundation be new, the cells will be drawn out in readiness for brood or honey.

During hot weather the bees will gradually spread themselves over the combs. In some extra large hives we have in use, in which there are several combs placed behind the division board, the bees will be found on all favourable days busy cleaning away the debris, and other-

wise preparing them for future use. Keep all weak colonies limited for room, so as to maintain the temperature of the hive as much as possible. The brood nest may be enlarged as often as necessary, but it is as well to err on the side of safety until a favourable change in the weather sets in.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Fisher, Son, & Sibray, Ltd., Handsworth, Sheffield. — *Bedding and Border Plants.*

H. Henkel, Darmstadt. — *Aquatic Plants.*

E. Hills, West Street, Reigate. — *Seeds.*

W. Mauger & Son, Guernsey. — *Wholesale Bulb Catalogue.*



All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Heating Small Greenhouses (F. G.).—We presume you desire to heat the greenhouse, and render it suitable for the growth of plants in winter without the aid of a boiler and hot-water pipes for distributing heat throughout the house. We do not know of any oil stove that we should trust to do this in a house of ours of the dimensions you give. If you turn to advertisements over a few back numbers you will find small borders for heating far more reliable than a stove inside the house.

Sewage Farms (P. W.).—We do not know of a book on the "management of sewage farms." If any of our readers can recommend one which they have found useful, and will favour with its title, price, and publisher, we will gladly furnish you with the information. We received the communication you sent some time ago, but doubt if its publication would serve any useful purpose. Similar suggestions have been published more than once or twice, and the discussions that followed had no practical result; your letter, however, is still in existence.

Muscat of Alexandria Grapes Blackened (A. W.).—The berries are simply shanked. No doubt keeping the house too close and moist would aggravate the evil, but the defect arises chiefly from an unsuitable rooting medium. The border may be too close and wet, or deficient in suitable nutrients, or an excess of something prejudicial. In such cases a dressing of lime frequently has a good effect. We should give this in conjunction with soot, using equal parts by measure, and employing half a pound of the mixture per square yard, point in very lightly. The lime should be best chalk lime, air slaked, or slaked with the least amount of water necessary to cause it to fall into a fine, apparently dry, floury condition, and cool when used.

New Coreopsis (H. D.).—If you had seen the flowers on their arrival their pitiable condition would have brought tears into your eyes. Four flowers, loosely placed in a dry box, without any packing, large enough to have held 200, were so dashed to and fro in transit that there was really very little left of them. We could see they were larger than other shrivelled and shrunken Coreopsis flowers would have been, and of a rich orange in colour. We presume they were cut from a plant that was raised from seed in the autumn. We should think that such flowers when fresh would be generally acceptable at this period of the year. If they had been so closely packed in soft green grass as to have been immovable they would no doubt have arrived in excellent condition. See our remarks below, under "Names of Plants."

Seedling Gloxinia (Rheola).—The flower, so far as we can judge from its shrunken condition, was no doubt when fresh bright and attractive, lobes scarlet margined with white, and a spotted throat. The variety is worthy of increase for home decoration, but we doubt if it is of commercial value. You took great pains in packing, but in the wrong direction. See our remarks on the subject in the above lines.

Hibiscus sinensis—Maple Leaves—Magnolias (J. C. S.).—Hibiscus rosa-sinensis and its varieties are stove plants, but are sometimes grown in a warm greenhouse, the soil being kept dry in the winter, but not allowing the wood to shrivel. The sprays are not those of Acer saccharinum, for the leaves of this are "cordate, smooth, palmately five-lobed; lobes acuminate, sinuately toothed." There is no toothing on the lobes of your specimen. It appears to be A. palmatum, or a form of it. Magnolia glauca has white, very fragrant flowers in May to July, and is a very fine evergreen shrub. M. obovata discolor, syn. M. purpurea, is a pretty, small, deciduous shrub with flowers purple outside and white within, and fragrant. M. fuscata is a greenhouse evergreen shrub with dull purple, very fragrant, small flowers. The two first named are hardy, but the first is best grown against a wall in cold districts.

Pear Leaves Diseased (R. D.).—The cause of the insects in the Pear leaves we do not know, other than that they find in them the food essential to their existence and continuation. The insect causing the blisters is the Pear leaf mite, Phytomyces pyri, which spring from eggs deposited in the tissue of the young leaves, and when the mites are developed they pass through an opening in the under side of the leaf to other leaves, biting through the outer skin and causing a blister, in which more eggs are deposited in turn in the gall, and so on till late summer, when males and females are developed, these living dormant in the scales of the buds during the winter. The best cure is to prevent the enemy attacking the trees in spring by dressing the buds carefully with petroleum emulsion, diluting the kind advertised with six parts of water, and applying in winter with a brush or spray distributor. You may also now use the emulsion, diluting according to the instructions, on the under side of the leaves, by spraying upwards. This will deter the mites spreading to other leaves.

Diseased Melon Shoots (J. L. M.).—The leaves had the appearance of attack by the Cucumber mildew, Plasmopora cubensis, but under culture the diseased parts have developed fruits of the common mould, Pencillium glaucum, usually associated with decayed organic matter. We found no trace of any other micro-organism, nor was there anything to account for the browning, or rather scorching, of the points of the shoots and young leaves. We have known such to arise from excessive evaporation on bright weather recurring after a period of dull and cold, the plants not being in very good condition at the roots, or too dry. The symptoms are not inconsistent with an attack by eelworm at the roots, but of that we can offer no opinion. There has been a sudden check of some kind, but by what caused we are unable to say in the absence of any information to guide us. The plants affected may recover if the disaster has been caused as suggested, the conditions of growth are as favourable as possible. In most cases, however, stunted plants seldom prove satisfactory. If eelworms are present you will find the roots knotted or swollen, in which case uproot, scald the soil, and plant anew.

Vine Leaves Brown and Sickly (M. D.).—The leaves have every appearance of being attacked by red spider, but they are, as you say, "very clean" in that respect, and there is no trace of insect infection. The younger leaves have the upper surface freckled by yellowish brown spots with yellow centres and reddish borders, with numerous yellowish pustules on the under side of the leaf. On the older or fully developed leaves the spots have reddish borders, the leaf assuming a brown appearance as if mature, but with a sickly and dried-up aspect. The under side of these leaves is covered with numerous small black pimples, and from these issue a very curious thick thread from the apex of each, which twists about in a horn-like manner, and consists of threads of bodies glued together by an adherent substance. The minute pimples on the young leaves are the early, and those on the older foliage the matured pustules or pycnidia of the black rot fungus of the Vine, Lœstadia Bidwelli. The berries show no trace of the parasite, but the disease does not appear upon them until about a fortnight after the spores mature on the leaves, and we are pleased to find they are not very active in germination, and may not develop on the cuticle of the Grapes, as they, being in the ripening stage, may have too tough and hard a skin for their penetration. Under the circumstances we should not do more than use a little sulphur on the hot-water pipes, heating them occasionally, say twice a week, to as near the boiling point as possible without actually making the water boil, keeping the house close for about an hour, and then allow the pipes to cool, and after a time admit the usual amount of air at the top of the house. This we consider will prevent the spread of the fungus, for it certainly cannot thrive in a dry and well ventilated atmosphere. Damp is an essential of germination and development, favoured by moisture on the leafage and fruit, such as occurs at night when the house is kept close, and in dull weather when little or no air is given. When the leaves fall or those attacked become useless burn them, including all damaged fruit, so as to get rid of the resting-spore stage of the fungus, and in winter dress the rods with a 10 per cent. solution of sulphate of iron, applying with a brush, also remove the surface soil of the border inside, and use an ounce of the sulphate per square yard as a top-dressing, and leave it there. Follow in the spring with best chalk lime, half a pound per square yard, and leave it on the surface to be washed in.

Roses in Pots (P. N.).—How far you may be able to satisfy your desire time only can reveal. We will, in an early issue, point out how they may be raised without the aid of glass, but fear you will consider the process rather slow.

Bedding Plants for a Dry Position (Amateur).—Zonal Pelargoniums are the most effective in fairly good soil and open positions. Heliotropes, Ageratums, Iresines, Coleuses, Golden Pyrethrum, Lobelias, and the various annuals raised under glass, all thrive well in a medium soil, and the bulk of them will stand drought fairly well after they are once well established. Petunias are suitable for quite the driest beds, and Marguerites may be associated with them advantageously. Dwarf Nasturtiums, if grown on rather poor soil and given good room, are remarkably showy, and stand both wet and dry weather well. If the beds are in a very dry state when they are to be filled give them a good watering a few hours in advance of planting, and the work can then be done easily and properly.

Increasing Marguerites (M. M.).—You will find that suitable cuttings can be rooted in June, as well without a greenhouse or frame as with those conveniences. Procure a box, such as a starch box, and bore a few holes in it for drainage, or rather to prevent stagnation of the soil, place a crock or oystershell over each aperture, then half fill the box with light sandy soil, pressing it down firmly, and cover the surface with pure sand. Next give a thorough watering through a fine-rosed can, and then, not before, choose, make and insert the cuttings. Growths, not too soft, but certainly not hard, without any flower buds are the best. They may be about 3 inches long or a little more, and two-thirds of their length divested of leaves, the end of each cutting being cut smoothly across with a sharp knife, not torn by a blunt one nor bruised by a pair of scissors. Insert the cuttings up to the leaves, making them firm by pressing the soil against the lower part of the stem with a pointed stick, and mind each cutting rests firmly on the soil, and is not suspended in a hole made too deep for it. Give a sprinkling to settle the sand about them, then lay glass across the box. The tops of the cuttings should be about an inch below the glass, which must fit closely for excluding air. Stand the box in a shaded place either outdoors or in a frame, but not under trees, and few of the cuttings will fail to grow. We should not expect to lose one out of a hundred. When they grow and touch the glass tilt it a little to admit air, and if the leaves do not flag admit more and more air till the plants will endure full exposure and sun. They will then be ready for placing singly in 3-inch pots, and if they can be kept close in a similar manner to that advised, in a deeper box, they will be established the sooner. When fairly growing they may be fully exposed, and when roots protrude through the drainage shift the plants into 5-inch pots for flowering, potting firmly in good loamy soil. They make excellent growth in the open air in summer much better than in a window, but the pots should be stood on ashes or other base impervious to worms, and, of course, the plants must be judiciously watered throughout, regulating supplies by the growth and the weather.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (J. W.).—1, *Cratægus pinnatifida*; 2, *Cercis siliquastrum* (the Judas Tree); 3, *Cratægus tanacetifolia*; 4, *Amelanchier canadensis*. (R. F.).—1, *Aërides Fieldingi*; 2, a good form of *Cattleya Mossiæ*; 3, *Cypripedium Lawrenceanum*. (B. P. S.).—1, *Pyrus aria*; 2, *Prunus (Cerasus) padus*. (A. L. G.).—1, *Saxifraga aizoon*; 2, *S. trifurcata*; 3, *S. hypnoides*; 4, *Thalictrum aquilegifolium*. (P. I. F.).—1, *Hemerocallis flava*; 2, *Corydalis lutea*; 3, *Philadelphus floribundus*; 4, *Geranium pratense*; 5, *Veronica gentianoides*; 6, an *Aquilegia*, species not determinable without flowers.

COVENT GARDEN MARKET.—JUNE 8TH.

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzonera, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, lb. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	0 0	to 0 0	Lemons, case ...	11 0	to 14 0
Cobs ...	0 0	0 0	St. Michael's Pines, each	2 6	5 0
Filberts, 100 lbs. ...	0 0	0 0	Strawberries ...	2 0	5 0
Grapes, lb. ...	1 6	3 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Fuchsia ...	6 0	to 9 0
Aspidistra, doz. ...	18 0	36 0	Heliotrope, doz. ...	6 0	9 0
Aspidistra, specimen ...	5 0	10 6	Hydrangea, doz. ...	8 0	10 0
Calceolaria, doz. ...	6 0	9 0	Lilium Harrisii, doz. ...	12 0	18 0
Coleus, doz. ...	4 0	6 0	Lobelia, doz. ...	4 0	6 0
Dracæna, var., doz. ...	12 0	30 0	Lycopodiums, doz. ...	3 0	4 0
Dracæna viridis, doz. ...	9 0	18 0	Marguerite Daisy, doz. ...	6 0	9 0
Erica Cavendishi ...	18 0	30 0	Mignonette, doz. ...	4 0	6 0
„ various, doz. ...	12 0	24 0	Musk, doz. ...	2 0	6 0
Euonymus, var., doz. ...	6 0	18 0	Myrtles, doz. ...	6 0	9 0
Evergreens, var., doz. ...	4 0	18 0	Palms, in var., each ...	1 0	15 0
Ferns, var., doz. ...	4 0	18 0	„ specimens ...	21 0	63 0
„ small, 100 ...	4 0	8 0	Pelargoniums, scarlet, doz. ...	4 0	6 0
Ficus elastica, each ...	1 0	7 0	„ „ „ ...	9 0	15 0
Foliage plants, var., each	1 0	5 0	Rhodanthé, doz. ...	5 0	6 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, doz. bnchs. ...	2 0	to 4 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Arum Lilies, 12 blooms ...	3 0	4 0	Myosotis, doz. bnchs. ...	1 0	2 0
Asparagus, Fern, bunch ...	2 0	4 0	Narciss, doz. bnchs. ...	1 0	3 0
Azalea, doz. sprays ...	0 6	0 9	Oreids, var., doz. blooms	1 6	9 0
Bluebells, doz. bnchs. ...	1 0	2 0	Pelargoniums, doz. bnchs. ...	4 0	6 0
Bouvardias, bunch ...	0 6	0 9	Polyanthus, doz. bnchs. ...	1 0	1 6
Carnations, 12 blooms ...	1 0	3 0	Roses (indoor), doz. ...	0 6	1 6
Eucharis, doz. ...	3 0	4 0	„ Red, doz. ...	1 0	3 0
Gardenias, doz. ...	1 0	3 0	„ Tea, white, doz. ...	1 0	2 0
Geranium, scarlet, doz. bnchs. ...	4 0	6 0	„ Yellow, doz. (Perles)	1 0	2 0
Iris, doz. bnchs. ...	4 0	6 0	„ Safrano (English) doz.	1 0	2 0
Lilac (French), bunch ...	3 6	4 0	„ Pink, doz. ...	3 0	5 0
Lilium longiflorum, 12 blms	3 0	4 0	Smilax, bunch ...	2 0	3 0
Lily of the Valley, 12 sprays	0 6	1 0	Tulips, doz. bnchs. ...	2 0	4 0
Maidenhair Fern, doz. bnchs. ...	4 0	8 0	Violets, Parme (French), bunch ...	2 6	3 6
Marguerites, doz. bnchs. ...	1 6	2 6	Wallflowers, doz. bnchs. ...	1 0	3 0



FRIEND OR FOE?

A NAME often reveals a good deal of the habits or character of the possessor. This is especially so with regard to the scientific appellations given to members of the animal and vegetable world; in fact, as a rule some distinctive feature is made prominent by the name. "*Corvus frugilegus*" is very full of meaning, especially to us, who provide the corn for the gatherer—corn that we meant for ourselves, not for the maw of the black coated rook. We consider at present we can look upon the rook dispassionately, or at least we feel disposed to take a lenient view of his misdeeds.

A rookery in the garden is a very pleasant adjunct to a country house. Observation of the habits and the gentle murmur of the never ceasing "caw caw" are very soothing and pleasant. True, the rooks are very untidy builders, and have no notion of tidy ways when Saturday comes; the mere human must then remove all the litter of broken sticks and miscellaneous rubbish which accumulates so rapidly; and the rooks are desperately keen on hens' eggs. This is when the young are hatched. We have often watched an old crow hovering round and about the stick heaps in a large poultry yard, and seen the egg fresh laid deliberately carried off—indeed, we have detected stolen nests by observing the attention paid to that part of an overgrown fence by the black marauder.

Who knows that country delicacy, so common in May—a rook pie? tender and juicy, and with, to our mind, much more flavour than a pigeon pie. We read so much of the evil deeds of this bird, that we are inclined to wonder if we do wrong by encouraging and fostering him year after year; and we have come to the conclusion that it is possible to encourage too much—that a multiplication of

rookeries is a mistake, like the over-preservation of game. In districts where the rook is much in evidence, it stands to reason he falls short of natural insect food, and must, to preserve life, have recourse to that which he has neither sown nor reaped.

We hear, too, in some neighbourhoods that no pains are taken to keep the birds properly thinned down; it is so easy a business in May to do so, that for the interest of the farmer it should never be neglected. Most owners of large rookeries organise shooting parties, and give a great deal of pleasure to young folks—for after a certain time in life we old people see no fun in craning our necks and spending hours in damp plantations.

What is it the rook steals? His enemies say everything that he can carry. Last autumn we had a field of late-sown Wheat after Potatoes, and the rooks were always thereabouts. The weather was very dry, and Wheat came up slowly, and despite a tenting boy we feared the seed must have been much molested. There were places all over the field where the land was scratched and regularly worked about, as though all the hens on the place had been dusting. However, the crop came up well, with no apparent shortage, and we believe now the rooks were more intent on the few remaining Potatoes than on the grain. He is a destructive bird in a field of newly set Potatoes, and has also a nice taste for the new ones as soon as they are formed; possibly he is on the look-out for wireworms, and the Potato is such a temptation—too strong to be resisted.

It has been said that a rook knows by instinct at which Swede root lies a wireworm, and that he never digs up any but an infested plant. That may be so of an old bird, but what of the youngsters that are learning their business—do they never make a mistake? We cannot help fancying they do, and the Swedes are the innocent sufferers. We have seen a freshly hoed and singled piece of Swedes devastated in one afternoon.

What about standing corn? Is the rook always innocent? Is it the wood pigeon alone who does the damage? Witnesses aver they have seen Master Rook fly off with ears of corn, which he enjoys quietly by himself in some adjacent pasture, and in some neighbourhoods where he is over-preserved he becomes very bold, and will actually draw out the ears of corn from the stack side.

In very severe weather visit a Swede field near the haunt of rooks, and see how the roots are pitted and marked and mangled by the iron bill, leaving the remainder to speedy decay.

Following the plough in spring, there is no more valuable bird than the rook. He requires at least 1 lb. per week of food, and as long as that food is principally wireworms, crane fly, and beetles we are his grateful friends, but when after the Barley is drilled he is afield again we do not feel so justified in defending him.

Early in March we heard of a rook being shot, and the contents of his crop were 200 grubs and one Oat. In May we further read of a rook's crop which contained 100 Barley grains and no insects. Does not this rather point to the fact that as soon as there is grain about the rook prefers it to grubs and worms? We think the bodies of a few dead rooks either attached to sticks or laid with outspread wings on the new sown corn are a way out of the difficulty, and a wary hand, spite of all that is said, can always manage to "down" a few old crows for the purpose.

We ourselves thoroughly believe in dressing corn with coal tar before sowing. A pint of tar carefully mixed with half a gallon of hot water till the tar is dissolved, then more cold added, sprinkled over the heap of corn, and this well turned about, will prove a deterrent to rooks or any other birds. This quantity of mixture will dress 4 bushels. Of course where rooks have been so encouraged as to become a perfect pest a raid should be made on rookeries at breeding time—that is, if permission can be obtained.

Never have we personally been overrun with these birds, but we can quite enter into the feelings of those farmers whose crops are constantly ravaged, and we know unless the owners of rookeries will co-operate the case for the farmer is almost hopeless.

[We wonder if our correspondent's dog would eat his "rook pie delicacy." We have known a man with a generally good appetite refuse it because, as he said, "hungry dogs would not touch it." Is this so?]

WORK ON THE HOME FARM.

More rain and cold weather! Work will soon be in a backward state, for we can seldom take horses on the land with any prospect of doing useful work. Already we have lost all the advantage gained by a most favourable winter.

We keep all hands at work with the hoe, but weeds kill badly and spring corn hardly grows at all; there can be little hope of Barley being ready to cut in August, and this crop now looks worse than we can ever recollect. Oats are nearly as bad. Wheat stands the cold fairly well, and being forward and strong may come to harvest by mid-August; it is quite the best crop of the year.

Potatoes are well up in rows, and we are keeping the horse-hoe hard at work whenever the land is sufficiently dry, but we have to be careful, for horses' feet do much harm amongst Potatoes when the land is wet. There will be none to earth up yet awhile. A few were tinged brown with frost one night, but there has been no material injury, and we hope that frost is done with for the present.

We are applying sulphate of ammonia to the late Potatoes now at the rate of from 1 to 2 cwt. per acre according as we think the crop will pay for it. To the second earlies we are giving nitrate of soda, as being quicker in its action. Care must be taken only to sow these manures when the haulm is quite dry; a heavy dew will sometimes be enough to prevent sowing till the afternoon.

It is time to drill Swedes, but much too cold and wet for the operation. We must possess our souls in patience and wait for more sunshine. For Turnips to do well the soil should be warm to the hand; the small plants will, under such conditions, soon make up for lost time.

If hands can be spared the grass and rubbish should be cut with hooks from the bottoms of hedges recently taken down, or the young growths may be smothered and revival of the fences much delayed. Old sickles are capital instruments for this work.

Mangold must be kept clear of weeds, and as growth is slow this cold season a top-dressing of nitrate of soda will be beneficial, 1 cwt. per acre now, and another after singling.

FARMERS IN CHINA.—The following account of the agricultural population of China, from Rev. James Johnstone's "Story of a Successful Mission" (Hazell, Watson, and Viney), is interesting:—"By far the largest number of the population among whom the missionaries have to work are agricultural—the farmers and farm labourers with their families—all, young and old, being less or more engaged in the work of the field. They are generally poor, but are, on the whole, a healthy, honest, kindly and most industrious and frugal race. . . . In Chinese society the farmer stands second in the social scale, next to the scholar in point of respectability, and the scholar stands next to the Emperor. . . . What makes the Chinese farmer, even the smallest, a self-respecting and independent man is that he holds his land by what is practically a permanent tenure. The Emperor is the owner of all the land in that vast empire, larger than the whole of Europe—the largest landowner in the world. The farmer of a few acres who holds his farm by direct title from the Emperor, if his title is what is called a red title—that is, not a transferred one—cannot be legally deprived of his land so long as he pays the rent. Even if he is obliged to part with his lease from failure of payment, like the Jews of old, he or his heirs can claim it back any time within thirty years, if he or they can pay the back rents with ordinary interest thereon. The rents are not high, for the average quality of land the price is about 6s. per acre per annum, inferior kinds can be had for 1s. or 2s. the acre, and the best for 8s. or 10s."

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.
1898. May and June.	Barometer at 32°, and Sea Level	Hygrometer		Direction of Wind.	Temp of soil at 1 foot	Shade Tem perature.		Radiation Tempera- ture.		
		Dry.	Wet.			Max.	Min.	In Sun	On Grass	
	inches	deg.	deg.		deg.	deg.	deg.	deg.	inches	
Sunday 29	30.128	55.0	48.8	S.	54.0	64.1	46.2	103.6	42.8	0.108
Monday 30	29.923	56.8	50.6	N.	54.5	62.1	49.4	114.9	49.2	0.025
Tuesday 31	29.623	58.8	53.4	W.	54.8	60.8	52.0	92.3	50.7	0.213
Wednesday .. 1	29.595	53.9	47.4	W.	52.8	57.2	40.1	104.4	38.0	0.134
Thursday .. 2	29.700	51.3	46.8	W.	52.1	61.9	44.2	108.9	42.4	0.116
Friday 3	30.025	57.6	50.0	W.	52.1	65.6	41.1	110.8	40.0	—
Saturday 4	29.960	57.2	51.4	S. W.	52.9	64.3	48.7	101.6	46.1	—
	29.851	55.8	49.8		53.3	62.3	46.0	105.2	44.2	0.596

REMARKS.

29th.—Generally cloudy, but occasional sunshine; rain from 11 P.M.

30th.—Rainy till 4 A.M.; sunny at times in morning; frequent drizzle after 3 P.M.

31st.—Alternate sunshine, cloud, and storm rains; hail at 11.15 A.M., and thunder in afternoon; cloudless night.

1st.—Sunny early; occasional sunshine and frequent heavy showers during the day.

2nd.—Dull, gloomy, and showery morning; frequent sun in afternoon, but thunder at 2.45 and 3.43 P.M., and storm rains at 11.30 A.M. and 4 P.M.

3rd.—Brilliant early, and sunny morning; generally cloudy after noon.

4th.—Generally overcast, but a little sun in late afternoon.

An average week, with rather more rain than for some months past.—

G. J. SYMONS.

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Of these alone the stock numbers several hundred thousand plants, all of the very best procurable types.

COLLECTIONS (our Selection only):—12 sorts for hot dry situations on Rockery, Walls, &c., 4/-; 12 for moist shady Rockeries, 4/-; 12 for sunny borders, 4/- and 6/-; 6 Aquatic plants for deep water, 6/-; 12 Aquatics for boggy places, 4/- and 6/-; Asters (Michaelmas Daisies), 6 sorts for 2/6, 12 for 4/-, 25 for 7/6; Sempervivums, 12 sorts from 3/6; 50 fine showy Border perennials in 50 varieties, 15/- and 21/-; 100 ditto, in 100 varieties, 35/- and 42/-. As all these plants are supplied in pots, they may be planted out practically at any time.

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(Our Selection.) Clematis, 12 fine sorts from 10/6; Ivies (finest green and variegated varieties), Honeysuckles, Wistarias, self-clinging and other Virginian Creepers, Ceanothus, Menispermum, Aristolochia, 12 fine sorts in pots, 12/-.

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Including Passion Flowers in great variety. Stephanotis (the freest blooming form), Clerodendron Balfouri, Lapageria (finest varieties), and many others at 10/- and 30/- per dozen and upwards, according to size.

STOVE AND GREENHOUSE PLANTS, FERNS, &c.

12 varieties flowering Stove Plants from 10/-; 12 varieties foliage Stove Plants from 18/-; 12 varieties Greenhouse Plants from 12/6; 12 varieties Caladiums from 12/-; 12 varieties Crotons from 24/-; 6 Epiphyllums from 7/6; 12 distinct named Gloxinias from 18/-; 12 Streptocarpus seedlings, in 3 inch pots, from 6/-; 12 double seedling Begonias, finest selected, true to colour and shade, 12/- to 30/-; 12 distinct Ferns for stove from 9/-; 12 ditto for Greenhouse from 6/-; 12 different Adiantums from 6/-; seedling Ferns for Rockeries, Table Decoration, &c., from 3/- per dozen.

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SPECIAL OFFER.—12 splendid Cactus Dahlias, including the following superb Novelties of 1897:—Cycle, Ensign, Flossie, Harry Stredwick, and Mrs. Kingsley Foster, together with Beatrice, George Marlow, J. E. Frewer, Lady Penzance, Mrs. Wilson Noble, Mrs. Francis Fell, and Viscount Boyne. Post free, 12/6.

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Mr. W. MEASE, Gardener to A. TATE, Esq., Downside, Leatherhead, July 3rd, 1897, wrote—

"I used your special CHRYSANTHEMUM MANURE last year with very satisfactory results, having won the Two Jubilee Gold Medals at the Aquarium for Cut Blooms." And again in November, he adds—"Your Manure is invaluable for finishing off Chrysanthemums."

The above is prepared from the receipt of
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Sample Bags, 14 lbs., 4/- Carriage Paid to any Station in the Kingdom.

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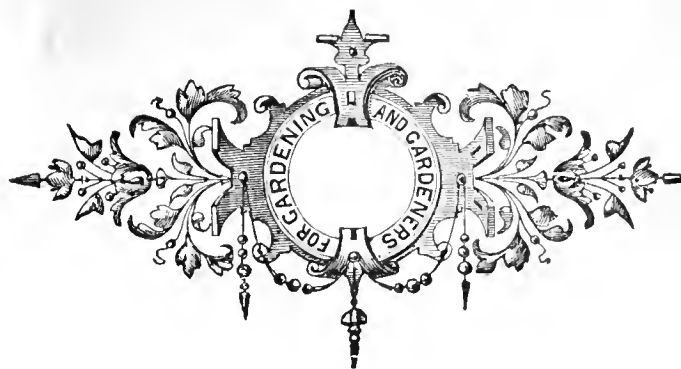
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Journal of Horticulture.

THURSDAY, JUNE 16, 1898.

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"HOT AND COLD."

IT has more than once been urged on the attention of writers for the press, or those young men who desire to become such, that when there is a choice between long and grandiloquent terms on the one hand, and short and simple words on the other, for the expression of an idea, a safe rule to follow is to choose the shorter. As with the pen, so with the voice, those who convey their thoughts with the least apparent effort, and are content to employ the short, smooth words of their mother tongue, are those who best make themselves understood. There are, of course, some short words that are not "smooth," and these may be eschewed as useless, in favour of the useful and agreeable.

Then in the transaction of business, the nature of it suggests abbreviation, and even total changes of words, which are employed as a matter of convenience, and well understood by those immediately interested. This is so in connection with the production and sale of various kinds of garden produce, as in the trio of simplicities which for the first time form a not inexpressive headline in the *Journal of Horticulture*, but they have nothing to do with the weather outside nor temperatures under glass, and have no connection with heated argument or cold criticism. They have just the same significance as "Cues" and "Toms" and "Roons," no more and no less, which stand as denominating factors in the trade vocabulary in which Cucumbers, Tomatoes, and Mushrooms are the products in question. Thus is effected a saving of letters and of time—of the former by just half, or from twenty-six to thirteen, while the shortened symbols trip lightly off the tongue, whereas the words complete and in combination represent somewhat of a mouthful. This would surely be felt to be so if uttered several times a minute for an hour, during the process of auction or other sales. It is precisely the same with "Hot and Cold."

"But what crop or crops can these possibly stand for?" many persons might not unnaturally ask, who had nothing to guide them to the comprehension. They really stand for two very familiar

crops to most people, but of greater importance to those who grow them extensively and well than the majority understand. Represented in their scientific form we should have *Sinapis alba* and *Lepidium sapidum*, but this would never do; it would be too overwhelming and decidedly better is the popular rendering, Mustard and Cress. And now that the secret is out it may be wonderingly asked, "If any simpler terms can possibly be needed?" Test the matter for yourselves, ye who may thus wonder, by shouting "Mustard and Cress" fifty times as fast as you can, and perhaps your tongue and thorax will be glad of a rest; do the same with "Hot and Cold," and the organs will be in as good going condition as ever. Or take another test; write the words down an equal number of times, and you will find you have used just twice the amount of ink, time, and space over the repetition of one formula as the other, so it will be seen that the making of simple terms simpler still has its uses.

Even now all that is pertinent has not been said. It can be proved that "Hot and Cold" is a more correct term to employ than "Mustard and Cress" in the industry in question—more exact, truer and safer, while certainly not less expressive. But how more exact and especially "safer?" Well, if a trade grower sold 100 gross of Mustard and Cress for £60, which would be about the wholesale value, and were driven to resort to an action at law to compel payment, he might happen to lose the case on a technical point, for the defendant could put in the plea that half the "stuff" sold was not as represented in the invoice; but no such risk could be incurred if the goods were sold under the recognised term of "Hot and Cold," for that is precisely what they are.

Another point now arises. Suppose all the readers of these lines had a punnet of this commercial Mustard and another of Cress before them as supplied to and obtained from Covent Garden, and votes were taken as to which was the "Hot" and which the "Cold" in the opinion of the members of that great jury. Would they all be alike, and all correct? It is questionable. In a small test the majority of those who gave their opinion quickly and without much thought was in this form:—"Why, Mustard is 'Hot' of course." Those who reflected were not quite so sure, as they could not say that tongue-biting Cress is "Cold." It is wise to "think" before voting on anything if you wish to be right, as it is so easy to be wrong in a headlong rush.

Those who thought over the subject the longest were right in this particular case, for the Cress is the "Hot" and the Mustard the "Cold" of the great purveyors for the London market, whence millions of neatly packed punnets pass to all the popular centres in the kingdom. As a matter of fact, as many persons know, the punnets of "Cold" and sold under that term, are a dense mass of young, smooth, silvery stemmed Rape plants; and, as many more persons do not know, if the punnets were packed with young genuine Mustard plants they would not sell half so freely, nor realise perhaps half the price.

It is useless forcing on the market for meeting the wants of the million produce that has nothing beyond what a connoisseur may regard as "quality" to recommend it. Tempting appearance appeals far more powerfully to the great bulk of purchasers than does anything else. If they will not have the woolly, dingy-looking stemmed Mustard, let them have the pure glassy-looking stemmed Rape for contrasting with the dark, thick, succulent young seed leaves. It is the same in respect to other products. That which "looks" the best, and especially early in the season, sells the best, even the showy International Potato, which its raiser, Mr. R. Fenn, declared was not good enough for pigs. He declined to put it into commerce, though it found its way there, for more money to be made by it, because it gives heavy crops of large tubers in good time, than he ever made by his other varieties that possessed his high ideals of quality. Well, all honour to the man whose desire to increase the flavour and food value of a staple product was greater than his thirst for gold. "Question!" Yes, the digression is ended, with apologies. The question is "Hot and Cold," and the story about to begin. "Begin! Oh! better say finish." Please do not be impatient; the infliction will not last long.

Six or seven years ago some lectures on gardening were given under the auspices of the County Council in a certain corner of Surrey. About that time an eminent scientist, and excellent man, published as his opinion that gardening could not be taught in lectures. Well, not being a gardener, he thought so, but did not know. It has been taught in various aspects almost ever since at the meetings of the Royal Horticultural Society, and the lessons published in the Society's journal. But let that pass. Attending the lectures in a Surrey workman's club was a cottager who loved his garden and allotment, and took prizes at the local show. Among the subjects which most arrested Mr. W. Newton's attention were Cucumbers, Tomatoes, and Mushrooms, and it was mentioned that the remains of the Mushroom ridges formed the best possible material for the growth of Mustard and Cress. It was on the main subjects, however, on

which he asked the most questions, and was told not to cease till he felt he understood the various details as elucidated by the aid of diagrams. He proceeded till he was able to say, "I now feel my feet, and will have a try."

To decide by such an earnest man was to act. Wood and glass were obtained forthwith, and he filled his long back garden with two span-roofed houses, the work of his hands. One he devoted to Cucumbers, the other to Tomatoes. He had seen none grown, but worked entirely from the winter instructions, and no one seeing the houses the following summer could but have admitted that the work in them in all cultural details equalled that of a trained gardener. The end of it was that within a year of his club-room lessons, he sold the produce of his well applied labour and skill for more than £200. Good for a cottager whose daily labour was among bricks and mortar.

When such a man starts in such a way, so long as he has health, he is not likely to stop. Mr. Newton, with his healthy frame, clear head, strong arm, and persevering labour, went on. How many capacious span-roof structures he has now on his own freehold cannot be remembered, but there are many, forming an imposing block. In these are grown Cucumbers in summer, and "Hot and Cold" in winter, as well and as profitably as these crops could be produced, not the least satisfactory being the winter produce. Tomatoes are only now grown to a limited extent. The surrounding soil is low lying, no doubt a reclaimed swamp, and quite black with vegetable matter. It is therefore not adapted for "Toms," so "Cues" are mainly relied on as the summer crop.

The "Hot and Cold" culture is by no means limited to the houses in winter and early spring. The zealous grower secured all the land he could in an adjacent allotment ground for Mushroom ridges, and after gathering heavy crops from them, utilising the then decayed manure in a large area of improvised frames, a great extent of these covered with sashes, others, as warmer weather approached, with mats or other material. As a matter of routine, however, stretches of newly sown seed are first covered with mats, usually a double, if not sometimes a treble thickness, spread directly on it. As growth proceeds they are gradually withdrawn, and when the plants are an inch or so high the last is removed, and lights, liberated by previous cuttings from a similar area, placed over for finishing the crop. The work thus goes on with machine-like regularity, and a great and wonderful work it is for a man whose days were spent in handling bricks and mortar to have accomplished in so short a time.

As a general indication of the scope of his operations in the growing and selling of "Hot and Cold," it may be said that the output is 120 gross of well-filled punnets a week, or more than three-quarters of a million a year—or, to be a little more precise, 898,560, worth, at the wholesale price, £3744, though a large local trade is done by heavy purchases, for the Croydon market particularly, which caters for not less than 150,000 people, and for such sales by the five or ten dozen punnets to many purchasers, materially higher prices are easily obtained. The London consignments average 100 boxes of five dozen punnets thrice a week during the busy season, or 18,000, weekly value £75.

The punnets are packed in two tiers, but with nothing whatever between them, those constituting the upper tier standing directly on the produce in the lower without injuring it in the least, or it would not be done. This demonstrates how closely and firmly the 6000 "cuttings" at a time are packed in the punnets. The work is done well and done quickly—an art only to be acquired by experience. It may seem strange to those who have not seen the process that a man will cut and pack faultlessly thirty dozen punnets in an hour, or six a minute, and maintain the pace for eight or nine hours. As a matter of fact the two men told off to the work must do it to have ready the bi-daily demand.

It is due to them to say that they appear to do it easily, and without the least apparent bustle; indeed, one old hand, on being spoken to on the subject in a complimentary way, remarked, like the spider of old, in a "come into the parlour" sort of way, as he thought he saw a fly, "If you would like to venture a sovereign against forty dozen, I am ready to oblige. The fly was not caught. He had seen too many wily old spiders. It is a treat all the same to see smart, educated workmen, because it is only by "educated" eyes and hands that such feats of skill, for skill it is, can be accomplished.

As may be imagined, a considerable outlay is involved in the conduct of the operations, in the form of labour, seeds, punnets, and general routine, but there is the happy pendant that the greater the outlay the better for all concerned—master and men. The capital now employed simply represents the fruits of the work of previous years, and these only a few. To begin with, the resources of the "master" were not in his pocket, but his character, his enterprise, prudence, good judgment, and unflagging industry. Step by step on wisely judged, firm, sure ground, he has won all that is to be seen, and a great deal more.

Fancy a man who was at "day-work" seven years ago making a present to the public of £15 worth of punnets a week all the year round. During the busy period—March-June—his weekly punnet

bill ranges from £21 to £22; all these thousands of chip punnets being given away for the purpose of selling the produce in them. Then there is the seed. The last order given was for 50 quarters of Cress, and 75 quarters of Rape—not an ounce of Mustard. To insure the best English Rape a stock is provided a year in advance. The market has been known in previous years to be drained of the best home samples, and recourse had to foreign seed. This did not satisfy. The best seed obtainable gives the best produce of "Hot and Cold," and the best profits to the grower. Some £300 to £400 may be resting in sacks of seed at the present moment, but a germinating time will be certain to come of seeds and money, with the result of a sure and profitable harvest—ready for cutting in five days from sowing.

The last named fact is significant, for it simply means that a greater number of crops of "Hot and Cold" can be obtained from any given site in a given time than can be had from any other product in existence, whether grown in Cucumber or other houses in winter and early spring, or between planks on edge and the space bridged over by moveable sashes, or other screens, in the open, after the houses are wanted for summer work. Every one of these crops, well grown and well packed, or, in other words, of the first class in bulk and in quality, leaves a good profit behind it; and it follows that a working man who obtains fifty-two crops a year, and sells 17,000 to 18,000 punnets a week, deriving 20 per cent., perhaps more, on the outlay has not made himself a very bad business.

"How are these quick successional crops produced?" Brains constitute the chief factor. They have told the grower that every weekly crop of "Hot and Cold" must have an entirely fresh rooting medium. They have also told him how to provide a sufficient bulk, and it is a large one, of the very best kind for nothing—or rather at a sufficient profit to pay for the labour incurred in its preparation and use. It is in this way. Manure is bought, prepared, and formed into ridges, spawned, soiled, and covered, and a greater profit is obtained from the resulting Mushrooms than could be derived from any other edible product that could be raised on the same site, except perhaps "Hot and Cold," and this could not be had so well without the refuse from the Mushroom ridges.

This is wheeled into a large heap, and after a rest all that will pass between the wires is rushed with shovels through a large slanting riddle. The shorter of the fluffy portion that will not pass through is used as a bed, 2 or 3 inches thick, evenly pressed down, on which is spread a layer about 2 inches thick of the sifted decayed manure, smoothed, surfaced with a film of cocoa-nut fibre refuse, or preferably cedar refuse—a local product resulting from pencil-making—watered, sown, matted, kept moist and dark; the previously soaked seed starts into growth at once, the mats are by degrees removed, one good watering given, and the crop is ready within a week when the warmth is sufficient for its growth.

It is a close, dense, level mass, with not a particle of husk, grit, or anything else on the verdant surface. So thick is the sowing and dense the growth, that punnets can be thrown on it with impunity to be handy for the cutter. In a moment his keen, angled knife (fig. 92), with a push and a draw or two, severs the stems, seldom one too many or too few at a time, the portion severed



FIG. 92.—SMALL SALAD CUTTER.

not falling; it is seized with both hands, and with a turn of the wrists is wedged in the punnet (fig. 93) in one deft quick movement. It is emphatically skilled labour, and the men are properly paid the average wages of good gardeners.

Lads supply the cutters with empty punnets, and the packers with full ones. Men with barrows follow the cutters, and take out in flakes the material placed in a week ago. It bristles with short stems, and is matted closely with myriads of roots. It is heaped for the vegetable matter to decay, turned over, and in a year is ready for use again, the remains of one crop affording appropriate food for another, and so the round of work and rest, of life and death, and life again goes on—a great lesson in a small way on the marvellous economy of Nature, whatever more.

It is not infrequently advised that Cress seed, because of the comparatively slow growth of the plants, should be sown a day or two in advance of Mustard, so that both may be ready at the same time. In the larger culture under notice all the seed is soaked for twelve hours. The Rape seed just swells, but takes up little water. The Cress seed during the same time absorbs its own weight of water, swelling from 1 bushel into 2 bushels in a day or a night. After being left to drain a little it is rubbed through with dry sand, as if separating Carrot seed, sifted, and sown with the Rape (which

is not so treated), and both crops are ready for cutting at the same time.

This story of a worker, however incomplete, has extended to greater length than was expected. It may, perhaps, however, be tolerated. The narrative is not without interest; it should be encouraging, and may possibly be useful. Be that as it may, such progress by a son of toil, who has made himself in so short a time the second largest grower of "Hot and Cold," so far as is known, in the world, is worthy of recognition in the *Journal of Horticulture*.

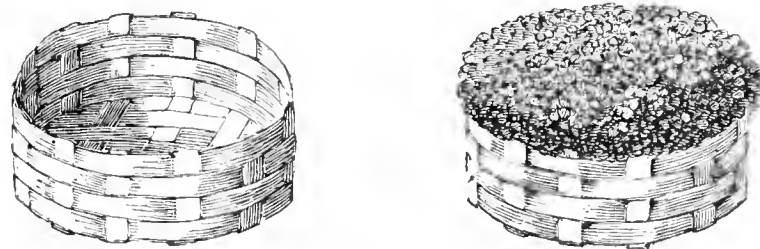


FIG. 93.—CHIP PUNNETS.

A small portion of the work described is shown in the illustration (fig. 95, page 503).

Another branch of Mr. Newton's outdoor culture, in part on land of his own (the best part), in part held on a rental of £50 an acre, may be referred to in a future issue. In the meantime, those who happen to think the rent a little high may perhaps wonder and guess what the crop can be that pays it—and the grower, too.

SPRING TRENCHING AND ITS RESULTS.

I WOULD like to say a few words in answer to Mr. Pea's paragraph in your issue of June the 9th. Mr. Pea will persist in "confounding things that differ." He says his experience has been disastrous for my arguments. I might have left this unnoticed, for your correspondent "Examiner" gives answer sufficient to both the experience and arguments of both Mr. Pea and Mr. Dunn.

My remarks were based on my experience under entirely different circumstances to those under which my able literary opponent practises. He, no doubt, correctly relates his experience. Does he suppose my observations for the last sixty years are not correctly related? He is a man, we will hope, with a long happy future before him, and may regard the remarks of one well through his eighth decade as visionary. He has persistently ignored the conditions under which I found spring digging more desirable than that of autumn. If Mr. Pea had ever practised on a heavy soil, where I sometimes experienced 25 inches of rain in two consecutive winter months, I venture to think that he would have found it impossible to alter either the philosophy or the results that I have advanced. He seems to try the impossible and question my results. I judge his remarks more charitably as to his practice in dry Kent. I presume if he was placed on a similar soil to that I originally referred to, and where I sometimes registered nearly 6 feet of rain in twelve months, I feel pretty sure he would fall into my practice. On the other hand, if I had to deal with his clay I would take a very different method of improving it, with permanent results, by practices adopted in some cases perhaps before Mr. Pea was born, or at least ever handled spade or fork.

It was the wet climate of Drumlanrig that I wrote of, and nearly thirty years' practice there confirmed the correctness of my methods. The soil there now is permanently very different to what I found it. I have old pupils practising in Kent who could tell that I found a large part of the kitchen garden a strong yellow clay, from which the bricks of the surrounding walls were made. I did not do the amelioration as I did 6 acres of strong yellow clay in Middlesex by burning it; the climate of Drumlanrig in winter would have drowned out the burning process.

It was by wheeling on to the clay quarters great quantities of old Vine borders and other light materials, such as the finest sittings of ashes and a great amount of soot out of the flue I had constructed to take the smoke of the furnaces three-quarters of a mile away from the garden. Anyone who sees the height the quarters are above the walks at this date can form an idea of the amount of light material put on them. If I were Mr. Pea I would not, in a dry climate like Kent, be long bothered with such a pasty mass as he describes. If I could get coals and some old trees to set fire to it, I would burn it, and wheel or cart on it all the light material I could lay my hands on, and then turn all over the same as you would mix soil on a potting bench. Expensive work, some may exclaim. Not half so expensive as the unsatisfactory annual work Mr. Pea describes, as a few years of labour saved and the increased yield would soon put the credit figures on the right side.

As for Mr. Dunn's objections and criticisms, I really do not know

what more to say after what "Examiner" has so pertinently said. It is high time anyone who cannot understand why heat radiates more rapidly from a solid body than from a loose body of soil (resulting in its being the more deeply frozen) furnished himself with some textbook on natural philosophy, at which both your correspondents indulge a partially veiled sneer. A little study of these laws would open up a new world to them in the garden, as well as in most things.—D. THOMSON.



KINGSTON CHRYSANTHEMUM SOCIETY.

I HAVE received a copy of the schedule for the next November show of this Society. It is not an exhilarating document, because it shows a considerable deficit owing to various causes, but this deficit is not representative of any indebtedness to other than the recently appointed Secretary, who, as assistant to the late Secretary and Collector, has so far foregone any payments due to him for two years. Very material reductions have also been made on the previous year's classes, the Committee being very anxious to keep expenses well within their probable income. It is pleasant, however, to find that the show will this year be held on the 1st and 2nd of November, and will not thus clash with the National Society's show. It is hoped that for such reason some of our leading trade growers and others desirous of assisting the old Kingston Show will send some fine exhibits, for only a determined effort is needed to place this once leading Society on a more satisfactory basis.—A. D.

SHEFFIELD CHRYSANTHEMUM SOCIETY.

THE June meeting was held in the Society's room at the Museum Hotel on Wednesday, the 8th inst., when Mr. M. H. Willford, Secretary of the Walkley Floral Society, read an essay on the "Amateur's Orchid," when he fully explained his method and treatment of the Orchids which he thought most suitable for amateurs. It was an excellent treatise, and was fully appreciated by the members present. He exhibited a fine spike of *Lælia purpurata*, and a spike of an *Oncidium* bearing a profusion of neat blossoms, notwithstanding the formidable specific title of *Phymatochilum* which was attached to it. Amongst the best kinds he recommended for amateurs were *Odontoglossum Rossi majus*, *O. maculatum*, *O. crispum*; *Oncidium crispum*, *O. varicosum* Rogersi, *O. flexuosum*; *Cypripedium insigne*; *Cattleya labiata*, Mossiæ, and Trianæ; *Lælia purpurata*, *grandis*, and *anceps*; *Dendrobium nobile* and *Wardianum*; and *Miltonia spectabilis*.

The monthly exhibits were table plants for amateurs when Mr. Willford secured first, Mr. W. Donaldson second, and Mr. W. Willgoose third prizes; and *Gloxinias* for professionals, Mr. C. Scott obtaining first and Mr. J. Dixon second prizes, no third prizes in this class being awarded. After a good discussion on Orchids, the essayist and the Chairman (Mr. J. G. Newsham) were each awarded a vote of thanks.

CURRENT WORK AMONG CHRYSANTHEMUMS.

THE final potting of Chrysanthemums will now be proceeding rapidly—in fact, completed by many growers when these notes appear; but there are doubtless others who, through pressure of important work in the garden, have been compelled to defer the operation for a time. Little or nothing is gained by very early potting, provided the roots have not become impoverished in the 32-sized pots. To obviate this I advocate the application of perfectly clear well-diluted soot water, both at the roots and foliage—to the latter of course by syringing, which should always be done in the evening. This gives the plants tone without unduly stimulating them into rank growth, while it acts as a deterrent of insects. But though over-luxuriance must be averted at this season of the year, a little manurial assistance is often beneficial before the final potting, as aiding the plants to lay a sound foundation, always remembering that uniform unchecked growth is essential from the cutting pot to the final shift.

By potting and standing the Chrysanthemums out of doors at an early date the cultivator runs great risk of serious damage being sustained by gales of wind and hail. These were prevalent last month, and gave a decided check to exposed plants, from which, unless the weather be of the most favourable character, they will be long in recovering. It is highly desirable where convenient to keep the plants in frames, or where they can be sheltered with glass as desired until the first week in June. Abundance of air can be afforded them by raising the frames on bricks, and keeping the lights off day and night during mild settled weather.

The compost, pots, and stakes, indeed all requisites, should in the meantime be prepared so that the potting may be completed with dispatch, and the plants forthwith arranged in the position they are to occupy for the remainder of the summer and early autumn. It is important that the soil in the smaller pots, and that to be used in the larger, be suitably moist—neither too wet nor too dry—and also that the new be pressed down as firmly as the old. Assiduous care must be exercised in watering. If the soil at potting time be fairly moist no water will be required for two or three days. The state of the weather at the time will guide the cultivator in this essential point. Frequent syringings will be absolutely necessary throughout the first week if the

weather be dry, always using water which has had the chill taken from it by the action of the sun's rays, and if rain water be procurable so much the better. As soon as it is seen that the plants have taken a firm hold of the new soil weekly syringings with soot water will greatly benefit the plants, as will soon be seen by the intense green hue of the foliage.

Those growers who use the bamboo canes for staking their plants will have made the tops secure from their old enemy the earwig. Nothing forms a safer and surer harbour for this pest than the hollow canes, and these should be either cut off at a joint or plugged. These canes are very much in request for staking, and if the 8-foot black canes be used I know of nothing to surpass them. Hazel stakes are preferable to the white bamboo canes. The latter have fallen into bad repute, and rightly so, for what looks more unsightly than long rows of them along the sides of garden paths? It is necessary to have the tying material of good substance, and to secure the stems very loosely in order that the points of the plants may not become damaged. If they are free to sway somewhat with the wind they will be less likely to snap than if drawn up tightly to the stake. Another important phase in the summer management of the Chrysanthemums is regular and prompt attention in taking out the side growths, which should always be performed cleanly, the evening being the best time for this operation.

Feeding the plants should be commenced as soon as the pots become well filled with roots. For the first few applications I prefer to use weak clear liquid manure only, such as the drainings from the farmyard; or sheep or deer droppings may be collected and placed in a bag, placing this in a tub or tank of water, always allowing it to soak well before using the liquid. The same method should be adopted in preparing soot water. A solution of good guano, as occasionally advertised in the *Journal of Horticulture*, used at a strength of $\frac{1}{2}$ oz. to a gallon of water, is highly beneficial, alternating these with an approved chemical manure, such as Beeson's, Clay's or Thomson's, all of which give substance to growth. Sulphate of ammonia, in dry or liquid form, requires to be used with extreme caution. It is easy to indulge too freely in its use and do much more harm than good, and probably sufficient nitrogen will be given through the agency of the manures enumerated above.—H. T. MARTIN.

ROYAL HORTICULTURAL SOCIETY'S EXAMINATION IN HORTICULTURE, 1898.

WE have received the report of the examiners appointed by the Royal Horticultural Society to test the knowledge of candidates on the subjects embraced in the questions that will be appended. The questions, it may be stated, are not disclosed till the moment comes for answering them. Candidates then choose eight out of the sixteen (four from each division), and make the best of them in the allotted time—2½ hours—without consulting books or notes to aid them in their duties. The report is as follows:—

The annual examination in the principles and practice of horticulture was held on April 6th: 190 candidates presented themselves for examination. Of this number 155 were from all parts of England and eleven from Scotland; nineteen gave no address on their papers.

Three hundred marks (the 360 named was a mistake) were allotted as a maximum, and all candidates who obtained 200 marks and upwards were placed in the first class. The total number was eighty-seven, or 45·7 per cent.

Those who received 150 and less than 200 marks were placed in the second class. The number was sixty-one, or 32·6 per cent.

Those who obtained 100 and upwards were ranked in the third class. The number was thirty-six, or 19·0 per cent.

The highest number of marks was awarded to Miss O. M. Harrison of the Horticultural College, Swanley.

The great advantage of systematic training is seen in the fact that of the pupils—e.g., of the Swanley College, twenty-four were in the first class and only four in the second. Of those of the Technical School of Stafford there were twelve in the first and seven in the second class; of the County School of Horticulture, Chelmsford, eight were in the first class and four in the second; while of the Horticultural School, Holmes Chapel, Cheshire, six were in the first class and four in the second.

Comparing the results with those of last year, we find that the number in the first class has slightly decreased—viz., from eighty-nine to eighty-seven. In the second class there is an increase from fifty-five to sixty-one; and also in the third class from twenty-eight to thirty-six. Those not placed have fallen from twelve to five. Comparing the per-centages they stand as follows:—

	1897 (184).	1898 (190).
First Class...	48·3	45·7
Second Class	29·8	32·6
Third Class	15·2	19·0
Not Classed	6·5	2·6

The answers were, on the whole, very satisfactorily given; and the general standard of those dealing with the elementary principles of vegetable physiology were somewhat better than was the case in 1897.

There is also a general improvement in the answers to questions referring to practical horticulture. Most of the students have a good general idea of the work, although a limited number only went fully into the minor details of it; but some of these details are essential to a full measure of success, and as far as possible they should be included in the answers.

GEORGE HENSLOW, {
JAS. DOUGLAS, } *Examiners.*

Before giving the names of the 184 successful candidates, with the number of marks obtained by each, it may be well to publish the questions on which the examination was founded. These may form useful studies for young gardeners, and answering them as well as they can, as pen and mental exercise, will be instructive and good preparatory work for future examinations in which they may like to participate.

QUESTIONS.

Eight questions only to be answered; four from Division A and four from Division B.

DIVISION A.—ELEMENTARY PRINCIPLES.

1. Describe the methods of propagation of different weeds; explain why Groundsel and Chickweed and the large white-flowered Convolvulus are particularly troublesome. What are the best means of exterminating these plants?

2. Point out the importance to the plants of a good circulation of air in a hothouse, and the consequences of a stagnant condition of the atmosphere within it.

3. Describe the different functions of leaves, and the best way to secure their due performance.

4. What are the component parts of a flower, and of what use are they respectively to the plant?

5. What external conditions are favourable for inducing variations to appear in cultivated plants; and how would you proceed in order to fix any variation?

6. What parts of the flower are retained and altered in forming the fruit of the Peach, Melon, Mulberry, Fir-cone, and Pine Apple?

7. To what natural orders do the following trees belong:—Tulip Tree, Maple, Apricot, Ash, Laburnum, Guelder Rose, Horse Chestnut, Hornbeam, Thuia, and Evergreen Oak? Which are natives of this country?

8. Describe the structure of the bulb of the White Lily, the corm of Gladiolus, the creeping-stem of Couch Grass, the rhizome of the Flag, and the tuber of the Potato; and explain their uses to the plants.

DIVISION B.—PRACTICE.

9. Describe landscape gardening as an art.

10. Describe the formation of a garden lawn, and the details of the work necessary to keep it in condition during the year.

11. What are the preliminary operations necessary to the laying-out of a garden for fruit and vegetable culture? Describe the arrangement of the fruit trees, and the method of planting them.

12. A garden having four walls facing north, south, east, and west, what varieties of fruit trees should be planted on each? Describe their first year's pruning and training.

13. Give full details of the propagation and culture of Grape Vines and Fig trees in pots.

14. Describe the culture of Seakale, Asparagus, and French Beans; and the best method of forcing them.

15. What are the best manures for kitchen and fruit gardens? How ought they to be applied, and when?

16. Describe the propagation and culture of Roses and Carnations intended to be cultivated under glass.

As to the questions, it may be said, though differing every year, they suggest that botanical and scientific, as well as practical cultural knowledge, is requisite for answering the stipulated number satisfactorily. Some of them are intended to encourage study and stimulate research, and may be regarded as tests of the intellectual acquirements of students in the directions indicated. It is not improbable that the marks of many industrious and culturally able gardeners would run low in Division A, while in this section they would run high (as they ought) by students who have the advantage of constant systematic training in technical schools.

Moreover, it may be assumed that the majority of the students in such establishments have had a much better general education than those youths who have passed direct from elementary schools to employment in gardens, and the former, in addition to acquiring special knowledge by coaching, are naturally better equipped than the latter for displaying it in the time and the form required in examinations. That is a powerful factor in their favour. The free and intelligent use of the pen is, and ought to be, an important element in the gardener's education. Gardening, in its highest aspects, is intellectual work, and gardeners should be intellectual men, of literary as well as practical working attainments.

Having seen hundreds of "papers" written in the form of answers to questions on gardening by earnest, worthy, respectable men, we well know the disadvantages under which many of them labour in making clear on paper the sound practical knowledge they undoubtedly possess. The R.H.S. examiners in their report above note the desirability of fuller minor details in answering questions on practical horticulture. Many most capable workers are intimately acquainted with the several details on which success hinges, but do not possess the "pen faculty," so to say, for their representation. We have given some encouragement to young gardeners to improve themselves in this direction, and have not a doubt that some of these will soon be competent to pass with credit through the ordeal of a R.H.S. examination. One to whom a gold pen was awarded is, as a matter of fact, in the "first-class" list of the present "exam."

SUCCESSFUL CANDIDATES.

FIRST CLASS.

	No. of Marks.		No. of Marks.
1. Miss Olive M. Harrison, Swanley ...	285	45. W. J. Hurford, Carshalton ...	225
2. Miss Mary Banks, Stafford ...	280	47. Miss Marion Hawkes, Swanley ...	230
2. O. H. Faulkner, Stafford ...	280	47. William H. Neild, Holmes Chapel ...	230
2. C. Lawrence, Stafford ...	280	47. Miss E. Morland, Kew ...	230
2. Miss Ethel S. Lutley, Swanley ...	280	47. G. W. Pyman, Chelmsford ...	230
2. C. Mann, Stafford ...	280	51. John Benson, Aughton ...	225
2. M. Wilson, Swanley ...	280	51. H. F. Easton, West Barnet ...	225
8. F. A. G. William, Palace Gdns., Gloucester ...	275	51. Miss Katherine M. Gervais, Swanley ...	225
8. A. Tanner, Cobham, Surrey ...	275	51. E. F. Jeffrey, Swanley ...	225
8. F. Ovenden, Stafford ...	275	51. A. Manson, Moreton, Blackburn ...	225
11. Miss Mary H. Graves, Swanley ...	270	56. Arthur Cooper, Wallingford ...	220
11. Miss Ethel E. Rands, Swanley ...	270	56. W. Cranfield, Bot. Gdns., Cambridge ...	220
13. Henry Mitchell, Stafford ...	265	56. F. J. Crook, Winchester ...	220
13. Miss Jessie H. Price, Swanley ...	265	56. F. H. Harris, Chelmsford ...	220
15. Miss Lilian Deane, Swanley ...	260	56. Miss Hilda Leese, Cricklewood ...	220
15. Herman Spooner, Chelmsford ...	260	56. A. D. Morris, Barrowmore, Chester ...	220
15. Harry H. Thomas, Kew, Surrey ...	260	56. Arthur Valentine, Chelmsford ...	220
15. Geo. Underwood, Leicester ...	260	63. E. Banks, Stafford ...	215
15. Miss Eunice Watts, Swanley ...	260	63. Thos. Bell, Paisley ...	215
20. W. H. Brownridge, Stafford ...	255	63. W. Brown, Cullen, Banffshire ...	215
20. Miss Ada C. Bryson, Swanley ...	255	63. A. E. Burgess, Chelmsford ...	215
20. G. Mills, Bayham Gardens, Kent ...	255	63. Hy. Davis, Stafford ...	215
23. F. Botterill, Stafford ...	250	63. J. Richards, Holmes Chapel ...	215
23. Miss Ethel Edmunds, Swanley ...	250	63. J. C. Tate, Bulmer, Yorks ...	215
23. Robert C. Gaut, Kew, Surrey ...	250	63. John S. Thompson, Swanley ...	215
23. Jos. Gillibraud, Holmes Chapel ...	250	63. Miss Annie E. Young, Swanley ...	215
23. Jos. Hope, Elvedon, Norfolk ...	250	72. Thomas Benians, Swanley ...	210
23. Arthur Jones, Holmes Chapel ...	250	72. Miss Ada M. Cassidy, Swanley ...	210
23. Harry Miller, Chelmsford ...	250	72. Miss Elsie G. Callender, Swanley ...	210
30. F. E. Boyes, Blackpool ...	245	72. Miss Frances E. H. Gervais, Swanley ...	210
30. E. T. Cole, Chelmsford ...	245	72. A. Stirrat, Bot. Gdns., Glasgow ...	210
30. J. K. Cureton, Stafford ...	245	72. F. W. Pallett, Chelmsford ...	210
30. Geo. Leadbeater, jun., Holmes Chapel ...	245	78. C. Buckland, Datchet ...	205
30. A. J. Morland, Syon, Brentford ...	245	78. F. B. Davis, Yeovil ...	205
30. R. Newman, Swanley ...	245	78. E. Walker, Wales, Sheffield ...	205
30. W. B. Pinder, Stafford ...	245	78. John T. Walker, Cobham ...	205
30. Wm. Woodward, Wallingford ...	245	78. E. Semper, Scawby, Lines ...	205
38. Miss Annie Ault, Swanley ...	240	83. Miss E. M. Brace, Sloane Street, S.W. ...	200
38. Hy. Broadbent, Park Hall, Evesham ...	240	83. Geo. W. Brookbank, Wimbledon ...	200
38. Geo. Butcher, Streatham ...	240	83. E. J. Pitts, Swanley ...	200
38. John P. Holt, Holmes Chapel ...	240	83. F. Weiste, Swanley ...	200
38. F. Lazenby, Bot. Gdns., Cambridge ...	240	83. W. H. White, Leicester ...	200
38. C. E. Malins, Swanley ...	240		
38. Geo. Ord, Newcastle-on-Tyne ...	240		
45. Isaac Godber, Norwich ...	235		

SECOND CLASS.

1. Hy. Brotherston, Gosford, Longniddry ...	195	26. Edward Rustige, Holmes Chapel ...	175
1. J. Burden, Crowmarsh, Wallingford ...	195	33. W. Burgess, Tewkesbury ...	170
1. J. Child, Stafford ...	195	33. J. Clark, Ashbourne ...	170
1. A. H. Davis, Sutton, Surrey ...	195	33. Miss C. F. Fellows, Swanley ...	170
1. W. Grantham, Aughton ...	195	33. A. Morton, Holmes Chapel ...	170
1. W. Hamnett, Stone, Staffs ...	195	33. Wm. E. O'Hara, Swanley ...	170
1. R. Hudson, Swaffham, Norfolk ...	195	33. H. P. Appleton, Leicester ...	170
1. E. Miller, Chiswick, W. ...	195	33. J. P. Quinton, Long Ditton ...	170
1. Basil G. Stanley, Tewkesbury ...	195	33. A. Shaw, Barnsley ...	170
1. Thos. H. Usher, Woking ...	195	33. W. Smith, Tewkesbury ...	170
11. A. J. Brabner, Yeovil ...	190	33. W. C. Smith, Bot. Gdns., Glasgow ...	170
11. Thomas Carr, Bonchurch ...	190	43. L. R. Baker, Merton ...	165
11. Louis Hales, Swanley ...	190	43. Miss Gertrude Bridger, Aughton ...	165
11. C. T. Illsley, Cobham ...	190	43. G. J. Goodall, Streasley, Reading ...	165
11. J. Jeffery, Moor Court, Stoke-on-Trent ...	190	43. W. Ness, Aberlady, Longniddry ...	165
11. J. Jordan, Stafford ...	190	43. E. Pedley, Halifax, Yorks ...	165
11. J. Lee, Gosford, Longniddry ...	190	43. R. Sumner, Aughton ...	165
11. J. F. Mitchell, Swanley ...	190	43. R. Y. White, Cheapside ...	165
11. A. J. Pye, Chelmsford ...	190	50. L. Davenport, Holmes Chapel ...	160
11. W. Sproston, Great Haywood, Stafford ...	190	50. Maurice Field, Wallingford ...	160
21. Chas. Fogden, Hayling, Hants ...	185	50. E. Russell, Leicester ...	160
21. H. R. Judson, Abbots Worthy, Winchester ...	185	53. W. Galloway, Gosford, Longniddry ...	155
21. J. Prescott, Aughton ...	185	53. J. Humphreys, Winchmore Hill ...	155
24. Hy. Child, Stafford ...	180	53. R. Jones, Aughton ...	155
24. C. Sellars, Middlesboro' ...	180	53. W. T. Smith, Stafford ...	155
26. E. Doiman, Wychnor, Burton-on-Trent ...	175	53. P. H. Jones, Stafford ...	155
26. Wm. Laurence, Chelmsford ...	176	53. H. Weddell, Surbiton ...	155
26. S. Lyversage, Stafford ...	175	59. H. Holmes, Garvald, Dolphinton ...	150
26. Wm. Morris, Holmes Chapel ...	175	59. B. Ling, Chelmsford ...	150
26. T. Ottewell, Stafford ...	175	59. S. J. Sayer, Chelmsford ...	150
26. Geo. H. Wicking, Leicester ...	175		

THIRD CLASS.

1. F. E. Belcher, Enfield ... 145	17. J. Wilson, Wallingford ... 125
1. A. W. Browning, Gosford, Longniddry ... 145	20. J. Hubbard, Mountfield, Faversham... ... 120
1. Henry Kingham, Chelmsford 145	20. G. Linter, Ventnor ... 120
1. E. Powell, Yoxford, Suffolk... 145	20. J. B. Pratt, Chelmsford ... 120
5. W. Hind, Aughton ... 140	20. W. G. Taylor, Chelmsford ... 120
5. Henry Hope, Leicester ... 140	20. W. H. Wield, Kingston Hill, Surrey ... 120
5. P. M. Marshall, Chelmsford 140	20. S. Wren, Chelmsford ... 120
8. F. South, Holmes Chapel ... 135	26. John Atkins, Caterham ... 115
8. H. L. Symes, Milburn, Esher 135	26. Samuel E. Brown, Caterham 115
10. Mrs. J. Chapman, Wimbledon Park ... 130	26. J. Dent, Wallingford ... 115
10. C. New, Ventnor ... 130	29. F. Wichelo, Wallingford ... 110
10. E. H. Niblett, Sandown ... 130	30. J. H. Brand, Caterham ... 105
10. A. McQuaker, Edinburgh ... 130	30. G. Hunter, Gosford, Longniddry ... 105
10. J. F. Sargeant, Swanley ... 130	30. G. Braddy, Chelmsford ... 105
10. D. A. Simes, Chelmsford ... 130	30. H. G. Chick, Caterham ... 105
10. S. W. Whalley, Streathley, Reading ... 130	34. J. Fudge, Holmes Chapel ... 100
17. H. R. Davey, St. Albans ... 125	34. C. Rymes, Surbiton ... 100
17. Robt. Perry, Milburn, Esher 125	34. A. Wilkins, Winchester ... 100

Glancing at the list of candidates and their marks, the observations of the examiners on the "great advantage of systematic training" is abundantly justified, for what do we find? Remembering that the maximum number of marks that can be allotted was 300, we find that with only three exceptions the nineteen candidates who obtained 260 and upwards were college or technical school students, and eight of them ladies, while one (Miss Olive M. Harrison, Swanley College) has won the premier position, and may therefore be described, with congratulations, as the Senior Wrangler, with 285 marks. Seven others of the nineteen, who are not more than 60 below the maximum, are Swanley students, while six have been trained in the County Technical School, Stafford, and one each in the Technical Laboratories, Chelmsford, and the Municipal Technical School, Leicester. The three others are Mr. F. A. Gwilliam, Palace Gardens, Gloucester; Mr. A. Tanner, schoolmaster, Cobham, Surrey; and Mr. H. H. Thomas, Kew Road, Surrey; and all are complimented on their success.

Several other students in the institutions mentioned, also in the Horticultural School, Holmes Chapel, Chester, have passed in some of the classes. Altogether we find eighty-five students in the lists from those technical schools, leaving only ninety-nine from the whole of the counties of England, in fact from the United Kingdom, where no special training is given for purposes of examination. We find the names of twenty-two ladies in the lists, all, save one, with the prefix "Miss" (and nearly all from Swanley), the notable exception being Mrs. J. Chapman, Wimbledon Park, and we think the men folk ought to congratulate them on their diligence and success.

Regarding Swanley as cosmopolitan, the college there being open to all the world, and the "Misses" beating the "Mr.'s" out of the field, the county, with no central college or school of horticulture, which heads the list of successful candidates is Surrey, with twenty-three. There appears to be the same number from Staffordshire, but nineteen of these are from the Technical School. Then the fall is great, Berks, Lancashire, and Hants (including the Isle of Wight) coming next in order, none exceeding a dozen. The "Garden Isle," though small, seems to have done nearly as well as Yorkshire, and better than any other county, except those named. Half the counties of England and Wales are not represented, nor is Ireland, though, as the report states, there are eleven students classed from Scotland.

Are the results satisfactory? One thing seems clear—namely, that the progress is not so general as the promoters of these examinations can desire to see. Why is there not a wider increase in the numbers of candidates? One reason is that a very considerable number of gardeners conceive that students in colleges and technical schools should, as such, have a separate examination. Whether this is advisable, and if so practicable, is for others to determine, but we know that some of the most able and intelligent gardeners decline to enter the lists of candidates under the existing conditions, and perhaps they would not enter under any other. They object to the scheme itself, which they regard as tending in the direction of the manufacture of gardeners largely by artificial processes, to the ultimate disappointment of a large number of them who cannot hope to find appointments which they can fill with satisfaction to themselves and others in an already seriously overstocked market.

It is not unreasonable that this feeling should prevail, seeing that so many excellent men cannot find employment in the calling to which they have worked so long and well. Furthermore they will ask, as we have been asked time after time, if the very best gardeners in Britain to-day, or in the world, have been made what they are by paper examinations? It is difficult to meet such questions, and if the examiners can do so we shall be delighted by their aid.

We have no difficulty whatever in answering another familiar question—"Are those persons who obtain the greatest number of marks to be regarded as the most competent all-round practical gardeners?" The reply to this is, "Certainly not; and a number of them never intend to be competitors for employment in the gardening

ranks." We know that this is so, both in the case of ladies and schoolmasters, but these are the better satisfied with themselves, and may be of more service to others by the knowledge they have obtained in an art in which they are interested, and which they believe it would be well for more to understand. In our opinion there cannot be too many persons imbued with such views, for we are convinced that the greater the number of people who are brought to love gardening, and to learn all they can about it, the happier will be their lives, and the better will this aggregate love and knowledge be for the community as a whole.

But there are obviously two kinds of gardening—the higher and more elaborate, and even luxurious, type for the comparatively few—the wealthy; the more plain, useful, attractive in a small way, but not less enjoyable for the many—the workers. For these—small villa residents, artisans, cottagers, and allotment holders who delight in gardening—the teaching and the tests must be different. Some of them, we know, struggle with the R.H.S. questions, but except in the case of a few educated amateurs, hopelessly. They indulge in the idea that by passing an "exam." they will pass into the ranks of professional gardeners, and be eligible to serve in that capacity in the gardens of the wealthy. It is a mere dream. There is better hope for them by starting in a small way commercially, and by degrees establishing a business that may be useful, as some have done. The private gardeners who will always be most in demand are those who are not only well grounded in the theory of the art of horticulture, but who have also gone through the mill of experience in more than one arena of practice—or, in other words, they must be expert physical workers, competent in a multitude of duties, as well as trained directors, whether they be men or women. It is admirable to see the endeavours that are being made to this end; but there is some danger that the outcome of all this zeal may be the production of rather too many superficial gardeners, by the art of coaching and cramming for the winning of marks in pre-arranged examinations—a process that has been tried and found wanting in elementary schools, and hence in most, if not all, of them largely discontinued in favour of surprise visits by inspectors and practical tests in routine work.

PYRUS FLORIBUNDA AND GOLDEN PIPPIN APPLE AS DECORATIVE TREES.

Apropos of the former, or rather of its variety, *atro-sanguinea*, mentioned on page 463, I am reminded of recently seeing several fine specimens in charming array in the pleasant grounds at The Grove, Harborne, the seat of William Kenrick, Esq., M.P. The trees in question are tall standards with densely branched pendulous heads, growing at about 50 yards apart in a long boundary border, enclosing a portion of the grounds from the public roads, the whole of the wide border being well furnished with a variety of other ornamental trees and shrubs, backed with a line of principally Austrian Pines. During the months of May and June, when Lilacs, scarlet and pink Thorns, Brooms, *Berberis Darwini*, *Rhododendrons*, Azaleas, and other similar plants, fronted with groups of hardy herbaceous flowers, unfold their flowers, this belt is very handsome.

Beautiful and attractive, however, as the various forms of *Pyrus Malus floribunda*, including *spectabilis* (the Chinese Crab), their compeers, some of the ordinary Apples, are equally beautiful, and worthily claim a similar position as ornamental trees. Especially does this apply to the old Golden Pippin with its rich deep pink blossoms and semi-pendulous habit of growth, and of which in particular I recently noticed one or two fine old specimens growing amongst several other sorts in a large cottage garden, or rather orchard garden. The scene in question is located at the junction of two public roads forming a partial boundary of a field, and embosomed on the side of the orchard facing the field is a very quaint old-fashioned Ivy-mantled cottage, thus lending enchantment to the view.

Long may this unique beauty spot be permitted to remain, and not—it may be relevant to remark—share the fate of an adjacent old cottage on the opposite side of the road in having been recently razed to the ground for highway improvements. It, too, was mantled with Ivy to the ridge of the roof. Tradition says that a family of Huguenots, when they were banished from France upwards of 300 years ago, found an asylum in this abode, and as a means of maintenance pursued the art of silk weaving. This locality is also additionally rich in historical attributes, inasmuch as within a stone's throw from the two old places adverted to is the residence once occupied by Cox, the celebrated landscape painter, and in the front garden of which is growing a Weeping Willow hanging its branches over the public footway. It is said to have been planted as a slip or cutting from the tree growing over Napoleon's grave at St. Helena. Also along one side of the same road or street are growing several large ornamental-foliaged Thorns, the gift of a French prince when on a visit to the neighbourhood.—W. G.

PEAS AND STRAWBERRIES.—It may interest some readers to know that Green Peas were picked here on the 9th inst. I cannot say the variety, but Harrison's Eclipse on a warm bank is practically ready too. The first unprotected Strawberry ripened on June 6th, a yearling root of Laxton's No. 1, being six to ten days earlier than similarly treated plants of Royal Sovereign and Noble.—EVESHAM GARDENER.



LÆLIO-CATTLEYA INTERMEDIO-FLAVA GOLDEN GEM.

THIS charming bigeneric hybrid was staged at the Temple Show by Messrs. Charlesworth & Co., Heaton, Bradford, and received from the Orchid Committee an award of merit. It is one of the most brilliant in colour that has resulted from the cross. The narrow stout sepals and petals are rich yellow, as is the inner portion of the throat. The front lobe of the lip, which is long, is beautifully fringed, and of a peculiar orange-crimson colour. It is very bright throughout, and the flower is most attractive. It is depicted in the illustration (fig. 94).

IONOPSIS PANICULATA.

ALTHOUGH a very beautiful Orchid this cannot be recommended for general cultivation, and the blossoms to hand from my correspondent, "J. R.," are evidently from plants that have not been long under cultivation. Newly imported masses, both of this and *I. utricularioides*, the only two species grown, move onwards with a fair amount of vigour, and, moreover, produce very fine spikes, but plants in thorough health after say six or eight years in this country, I have never seen, and I am afraid I never shall see.

They flower themselves to death as a matter of fact, the large branching panicles of flowers being altogether out of proportion to the size of the growths, and it is sad to see the little shoots getting weaker and weaker yearly. The best plan to pursue is to wire the plants firmly down to blocks of Tree Fern stem and keep them in a house the atmosphere and temperature of which are not given to fluctuation. Light syringings on warm days are helpful in keeping down insects and maintaining a little moisture in the atmosphere surrounding the plants. *I. paniculata* is a native of Brazil, and was introduced to this country about thirty-five years ago, though long known to botanists.

DENDROBIUM RHODOPTERYGIUM.

In this species, which is not by any means commonly grown, we have a very fine and attractive Orchid. The growth is stout and erect, or nearly so, deciduous, and the flowers are very freely produced, almost from end to end of the rough-looking stems. These occur on two or three-flowered racemes, and are rosy purple on the sepals and petals, often shaded or spotted with white; the lip is brighter in colour.

The culture of this *Dendrobium* is not difficult, and newly imported plants of it especially grow with great vigour. I like to put it well up to the light, and unless a suitable position is at command, should grow it in baskets in preference to pots. The compost will be of the usual peat and moss mixture, and though the newly imported plants are best in receptacles of rather restricted size, when a shift becomes necessary they may have more room. Grow it in the warmest house at command until the last leaf appears on the young stems, then gradually reduce the temperature, but still keep the plant in a good light, and eventually put it in a cool greenhouse. It is a native of Burmah, and was discovered in 1874.—H. R. R.

ORCHIDS ROUND LONDON.—THE WOODLANDS.

JUST a fortnight ago my first visit was paid to The Woodlands, Streatham, the home of Robert H. Measures, Esq., and at the outset it may be well to say that going with high anticipations I returned astonished and delighted with what had been seen. Of course The Woodlands' collection ranks with the finest, but until it had been visited its extent, its excellence, and its completeness had most unquestionably not been grasped. It has become customary in notes of this nature to conclude with a word of thanks to the owner and his gardener, but on this occasion I would reverse the order of things, and thank Mr. Measures for his kind reception, and for the feast that was displayed before my eyes, as well as the gardener, Mr. J. Coles, for the information so cheerfully given. This gentleman differs from most Orchid lovers in not showing his plants—not even send-

ing them to the Royal Horticultural Society for certificates—growing them wholly and solely for his own pleasure and that of his friends, and it can be well imagined that the store of pleasure must be inexhaustible. Day by day fresh flowers will be opening, and if they were not there are still the plants, whose leaves to the lover of them are well nigh as beautiful as the flowers.

Though Mr. Measures has been established in his present home for about eighteen years, it is only about sixteen since Orchid culture was first commenced, the nucleus of the present magnificent collection being some plants of *Cypripedium barbatum* bought at a sale in the neighbourhood. The admiration that was extended to those *Cypripediums* remains to this day, for the collection of Slipper Orchids is one of the finest in the world—if not in size, certainly in quality of the species, hybrids and varieties. Many are unique, and money could not purchase them. Look, too, at the *Lælia elegans*, which are acknowledged as the best in Europe. Every variety that could be was procured, until its present state of excellence was reached, and even now additions are constantly being made from reliable sources. No form of ordinary merit could find a place—all must be above it; then, and then only, can space be found for them at The Woodlands.

It must, however, be distinctly understood that while these two sections are the prime favourites, all other Orchids are represented to a greater or lesser degree. With all, too, the same desire is in evidence to reach a high standard of excellence, and it may be said that the efforts made are successful. House after house is entered, and in all of them are many Orchids in the rudest health. In several structures a departure from orthodox lines has been made, and instead of all having ordinary staging the plants are placed out in compost between large pieces of tufa rock. The effect thus produced is very charming, especially as Ferns, *Sibthorpias*, *Lycopods*, and other plants are utilised as a groundwork. Beneath the stages, too, a successful endeavour has been made to enhance the picture by building up with tufa, and planting Ferns in the crevices between the blocks.

But we must not continue with generalities, or reference will not be made to the several individualities that are worthy of it. The present is not the time of the year to see *Cypripedium insigne* in flower, but the splendid plants are there, and they tell of beauties that have gone, and of glories that are still to come. The collection of *Cypripediums* as a whole numbers between 4000 and 5000 plants, some of which have not yet flowered, while others have flourished for several years. Of the forms of *insigne* we hope to speak in a special note when they are in flower in the autumn, and for the

nonce it must suffice to observe that varieties of the highest merit are abundant. It may be interesting in connection with the insignes to record that in one importation four plants of *C. hirsutissimum* were found, besides several others that are sufficiently distinct to warrant the supposition of their being natural hybrids.

Other species of hybrid *Cypripediums* are now in flower, and many very beautiful forms are observable in the house devoted to them. Several of these are of great beauty, especially such as *Lawreanum*, *Sir Trevor*, and *Mastersianum*. The collection of *bellatulum*, *niveum*, and *leucochilum* is very comprehensive, and this section is especially favoured by Mr. Measures. Of the plants noted were *Annie Measures*, *Hector*, *Mrs. Herbert Measures*, *William Lloyd*, *hybridum Watsonianum*, *Lucianum superbum*, *H. Hannington*, *Monica Measures*, *Faireyanum*, *insigne Measuresæ*, *i. Sanderæ*, with many others, of which, as has been said, we hope to furnish particulars at a later date. That these referred with the remainder will produce an unparalleled display later in the year there can be little doubt, and it will be through no fault of the owner and grower if they fail to do so.

Reverting now to quite a distinct section of the Orchid family, we come to the *Lælia elegans*, and those, unfortunately for the writer, are not now in flower. It was, however, easy to see from the splendid growths, that a rich treat was in store for the late summer months, and it is hoped that we shall be able to examine them at leisure. Amidst such a host of plants as is here to be seen, it cannot be a matter

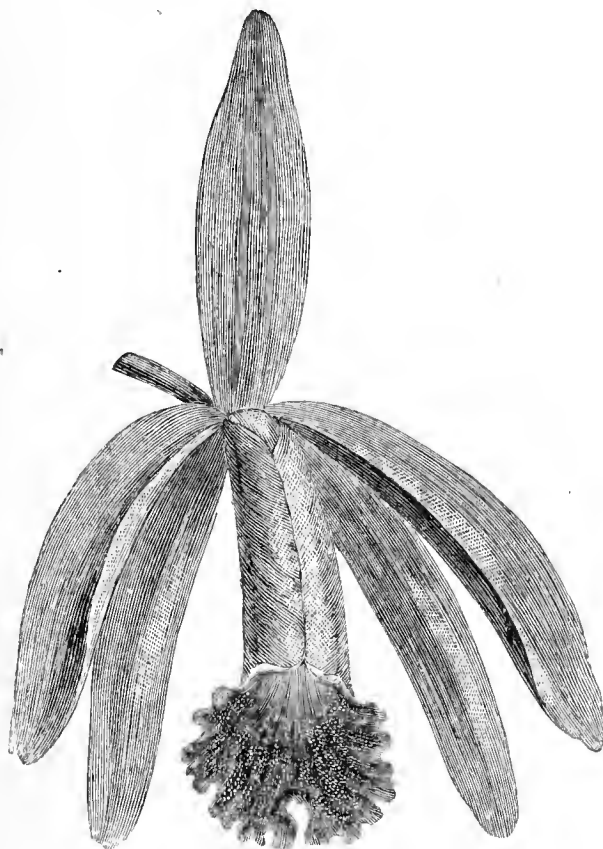


FIG. 94.—LÆLIO-CATTLEYA INTERMEDIO-FLAVA GOLDEN GEM.

for surprise that there should be such distinctiveness as in the growth, and this alone shows how varied is the stock. As a matter of fact there are many that none but an expert would recognise as being forms of elegans. Some have growths and leaves approaching closely to the size of those of *L. purpurata*, while others are very small. The shape of them, too, varies almost as much as does the size, but that they are elegans there can be no doubt, and it is quite as certain that the finest forms in cultivation are to be found amongst them.

Having seen and admired those mentioned, we passed through several houses of Cattleyas, and observed in flower some varieties of Mossiæ and Mendeli, with many specimens of gigas, Trianae, a splendid stock of *Lawrenceana intermedia alba labiata*, including more than one white variety, Mantini nobilior, Schröderæ, Gaskelliana, Bowringiana, and others beyond number. Lælias of the purpurata type, Lælio-Cattleyas, and Lælias tenebrosa and præstans alba, some in and out of bloom, were seen, besides scores of grand plants of *Cœlogynes* in a house to themselves. Angraecums, Anguloas, Vandas, Thunias, and Dendrobiums claimed attention in passing by reason either of the beauty of their flowers or the excellence of their several growths. Dendrobium Phalaenopsis are in great form, as are Phalaenopsis, whose tough leaves appear to be in the very best of condition. They occupy a front stage in a house on the back stage of which Anthuriums flourish, and the conditions are palpably congenial to all.

In an earlier paragraph brief reference was made to the Woodlands system of planting Orchids in beds on the stages, for which purpose Cymbidiums are great favourites. That the plan suits them is proved by the splendid condition of the stock, and it is a fact that many improve after the planting. Several species and varieties are utilised for the purpose in one structure, which also contains four plants of *Lælia purpurata*, that were turned out of pots because they were somewhat sickly; now they look well, and are making good headway. Another lofty conservatory has been built up with tufa rock, and is entirely occupied with Cymbidiums, which will, when well established, make a very charming display. Amongst the several other Orchids that were subjected to this treatment were *Cypripedium insigne* and *Odontoglossum grande*, each of which was in a very satisfactory state. Needless to say the use of dwarf trailing plants as a groundwork greatly enhances the effect produced by all these plants.

Hanging from the roof of one of the Cattleya houses was one of the finest collections of *Odontoglossum citrosum* it has been my pleasure to see. It is not included amongst those Orchids which are easy to grow; but at Streatham it luxuriates, and its requirements are evidently thoroughly understood. In cooler quarters are *Odontoglossums* crispum, Pescatorei, polyxanthum, and many besides, which were, when this visit was paid, looking very bright. Spikes of variously sized and coloured flowers were numerous, and the plants carried stout foliage of a deep green hue. *Miltonia vexillaria*, too, is well grown, and some charming varieties were noticed as we passed along. The flowers were of good average size, and ranged in colour from pure white to the richest rose.

Though the flowers are so short-lived few Orchid growers would care to exclude Sobralias from their houses, for some of them are of singular beauty. The blooms are here to-day and gone to-morrow, but they are nevertheless appreciated. Some of the most conspicuous at The Woodlands were Lowi, Amesiana, Measuresiana, Hookeræ, Kinballiana, and alba, but these were not all in flower. Lycastes, too, are numerous, but the same might be said of others, for the mention of which space cannot now be found. It was a pleasant treat to see the splendid plants in such immense numbers, and visits to see the *Lælia elegans* and *Cypripedium insigne* will be looked forward to with eagerness until their flowering times come round again.—H. J. WRIGHT.

FLORA OF TIBET.—During the last five years the Kew Herbarium has been enriched by a number of collections of dried plants from various parts of Tibet, some particulars of which have appeared in the "Kew Bulletin" from time to time. (See 1893, p. 369; 1894, p. 136; and 1896, pp. 99 and 207-216; also Hemsley in the "Journal of the Linnean Society," xxx., pp. 101-140, plates 4 and 5.) Several other small collections have reached Kew since; and one, by far the largest ever received from Tibet, was presented last July, but has not as yet been completely examined on account of the pressure of other work. This collection was made by H. E. Hobson, Esq., who is stationed at Yatung, on the eastern frontier of Sikkim and Western Chumbi, between Yakla and Gnatong. Botanically it is in the humid Himalayan region, where the vegetation is comparatively luxuriant and diversified, whereas all the collections previously noticed are from the arid sterile country, which begins a very little to the north. Mr. Hobson's collection consists of about 1500 specimens, largely of herbaceous plants, amongst which there are doubtless a good many novelties.—("Kew Bulletin.")



ROYAL HORTICULTURAL SOCIETY'S ROSE SHOW, CHANGE OF DATE.

MAY I ask you to be so kind as to announce, in as prominent a manner as possible, that the Council have changed the date of the R.H.S. Rose Show, advertised on page 59 of the Arrangements for 1898, from June 28th to July 12th? This alteration is necessitated by the abnormally backward state of the Roses this year.—W. WILKS, Secretary.

ROYAL ROSES.

WE are informed that on the occasion of the recent Floral Fête at the Royal Botanic Society's Garden, Regent's Park, the Prince of Wales was graciously pleased to name one of Messrs. Wm. Paul & Son's seedling Roses "The Alexandra," and to accept blooms of it. His Royal Highness also specially admired Messrs. Paul's new variety "Empress Alexandra of Russia."

ROSES AT THE EARLY SHOWS.

IT is a matter for regret that the long-continued untoward weather has somewhat marred the prospects of the early shows. Mr. C. W. Simmons, the well-known York Secretary, informs us that Rose entries are rather short. This is unfortunate, for as a rule the queen of flowers is seen in grand form in the northern city. We see by our advertisement columns, too, that the Isle of Wight Show, which was fixed for June 16th at Carisbrooke Castle, has had to be postponed owing to the lateness of the flowers. We hope things will brighten for the later exhibitions, but so far as we have heard results are not very promising.

NOTES ON CHOICE WALL ROSES.

ROSES on walls are now coming into flower, being favoured by position, warmth, and shelter in many cases from cutting winds, whereby they can produce blooms earlier than plants in the open ground. There is a wealth of wall Roses, but the choicest are undoubtedly the Teas and Noisettes. Some of them are better adapted for growing on walls and fences than any other method of cultivation, for the reason that they make long, strong shoots, and are generally robust in habit.

The hardiest of our Tea Roses, Gloire de Dijon, is one of the earliest and the freest in flowering, producing buff-coloured blooms in abundance at the point of every young shoot when a plant is in good health. On a warm wall facing south, either of a dwelling-house or a glass structure, few Roses seem to succeed better. Even after its first flush of beauty blooms will continue to be produced, which makes it almost a continuous flowering plant during the season.

Reine Marie Henriette is another Tea very similar in growth and habit to Gloire de Dijon, but its blooms afford a decided contrast, being deep red. It is an excellent wall Rose. Cheshunt Hybrid is also similar in habit and nature of growth, which is very free. The blooms differ in colour. They are cherry carmine.

A Rose of a totally different class has attained popularity of late years. It is the vigorous Crimson Rambler, styled a hybrid Polyantha. The flowers are borne in trusses of pyramidal shape, and the colour of the blooms, as the name of the Rose implies, is crimson.

William Allen Richardson, belonging to the Noisette class, is a remarkably useful Rose, and is considered in numerous cases to be worthy always of space for culture under glass, but one or two plants should be grown outside to afford a succession, selecting a favourable position. The blooms are of a deep orange colour, and the plant is almost a continuous bloomer. Rêve d'Or and L'Idéal are also Noisettes. The former is one of the hardiest of this class; colour, buff yellow. The latter is specially sweet scented, giving it an additional claim to be ranked as a good Rose. A white climbing Rose is indispensable. In Climbing Nipbetos we have a strong grower and free bloomer.

In the course of the summer long strong shoots will be thrown out from various parts of the trees. The best of these must be reserved, given every facility to ripen, and be finally trained in to form the blooming wood for the following season. During growth and flowering plenty of moisture at the roots is essential. It is, however, in danger of being deficient when trees are growing in positions where there is a probability of the rainfall not reaching the soil in sufficient amount for the requirements of the trees. Wall Roses are frequently unfairly treated in respect of moisture, suffering in consequence, growing weakly, and flowering indifferently the following season, if not during the current year.

Roses appreciate liquid manure. The best time to give it is in moist weather, or when the soil about the roots has been first moistened. It then enriches the soil and provides food in a readily available form. The effect of an application may soon be seen in the improved appearance of the foliage, the tendency to push new growths not only from the younger parts of the trees, but from the older. The flower buds plump up and the blooms open more readily.

The varieties above mentioned are well adapted to furnish the higher spaces of walls, but they do not readily clothe the lower parts, hence it is necessary when planting to intersperse varieties which will furnish the base of the wall effectively. Of the two classes of Roses, Teas and Noisettes, these dwarfier growing varieties are only found in the Tea

class, but there is a fairly wide selection able to fulfil the conditions required. The best white variety for the latter purpose is The Bride, and the next nearest in colour to it is Rubens, creamy white. A deep yellow is found in Perle des Jardins, and a pale yellow in Marie Van Houtte. Anna Olivier and Catherine Mermet are rosy fleshed varieties; Madame Falcot and Sunset, deep apricot colour. A good red variety is Madame Lambard.

These are not weakly growing Roses, but, on the contrary, they make strong growths, which, however, do not extend to the length of those previously named. As the shoots are produced it is desirable to lay them in, but not so as to crowd the growths unduly. Allowed to ramble in all directions the shoots become stiff and unshapely, which makes it difficult to place them in position as may be desired. Weakly growths may be cut out at any time to make room for more vigorous wood. Such will produce the best blooms if trained thinly and thoroughly ripened.—E. D. S.



WEATHER IN LONDON.—On Thursday and Friday of last week the rain descended in torrents at frequent intervals, this being especially the case of the latter day. Saturday was warm and genial, the sun shining brightly the whole day, while Sunday and Monday were dull and cold. On Monday night the wind was high, and more suggestive of November than June. Tuesday was dull and cold. Wednesday a little warmer.

WEATHER IN THE NORTH.—Since the 14th the weather has been dry, and the first three days especially warm and bright. On the evening of Friday the wind again set into the east, and rather duller days and a lower evening temperature have obtained.—B. D., *S. Perthshire*.

A PLAGUE OF FLIES.—A plague of aphides, or green fly, has attacked the fruit gardens and orchards in certain districts of north and mid-Herts. Bushes hitherto bearing abundant promise of fruit are now withering, and in the Hitchin district the Rose trees are covered with the diminutive pest. It is many years since the gardens in Hertfordshire suffered from a similar visitation.

METROPOLITAN PUBLIC GARDENS ASSOCIATION.—We learn that this Association has completed the laying out of the recreation grounds at East Street, S.E., and in Charles Square, N., and these are now open to the public; while the grounds in York Street and Kipling Street, S.E., are approaching completion. The West Ham Corporation has agreed to maintain a disused churchyard at Plaistow, E., which the Association had offered to turn into a public garden. The Association hopes to be able soon to lay out the Paragon, S.E., and a neglected square in Dalston.

EAST COWES.—At the last fortnightly meeting (held on June 8th) of the East Cowes Horticultural Society, presided over by Mr. G. Groves, J.P., C.C., the first of a series of lectures was commenced by Mr. S. Heaton, Horticultural Instructor for the I.W.C.C. The subject chosen by the members was "The Cultivation of Specimen Greenhouse Plants for Amateurs and Cottagers." Previous to dealing with the various foliage and flowering greenhouse plants, the lecturer gave some valuable advice on potting, watering, syringing, feeding, training, staking, tying, packing, staging, and labelling plants. At the close a unanimous vote of thanks was accorded the lecturer, on the proposition of the Chairman, seconded by Mr. Chas. Martin, and supported by Messrs. J. Hygate and A. Saunders.

MALMAISON CARNATIONS.—Amongst first-class growers of these Carnations a very high place must be given to Mr. McLeod of Dover House Gardens, Roehampton. This grower has now a splendid collection. The finest, some five dozen or six dozen, are in 9½-inch pots. They are about 3 feet in height, and as much through, and carrying many large flowers. All are about two years and six months from thumb pots, and exhibit superb cultivation. Mr. McLeod favours dry treatment, especially in the winter, when too much air can hardly be given. Watering is done sparingly, and all parts of the house are kept dry. Associated with the ordinary pink and carmine varieties are younger plants of that rich scarlet variety, the Churchwarden. These, as also a large number of younger plants of the old varieties, in perfect health, and all will next year make very fine plants. The large ones have been in their present pots two years.—D.

HEUCHERA SANGUINEA.—This plant, which belongs to the natural order Saxifragaceae, is now blooming very prettily in borders and rockeries. The flowers, rich coral pink in colour, are borne on erect slender stems, arranged thereon in loose panicles. They are useful for cutting, forming a tasteful decoration when placed in a glass loosely with a little of their own foliage. The plant is quite hardy, and succeeds in a comparatively dry and poor position. A stock of it may be raised from seed, sowing in a box and transplanting finally when large enough. Flowers appear the second year.—E. D. S.

A WEATHER CONTRAST.—The contrast between the weather of last Saturday and Sunday was, says a paragraph in the "Daily News," extraordinary. On Saturday we were favoured with a burst of summer warmth, the sun shining brightly nearly all day, and the thermometer in London rising in the shade to a maximum of 77°. Sunday seemed to take us back with a plunge into quite another climate, the sky being continuously dull and gloomy, with a temperature at no time exceeding 56°. Saturday's reading was, in fact, 8° above the June average, while Sunday's was as many as 13° below it, the maximum of 56° being about equal to the average for the months of April and October.

THE WEATHER LAST MONTH.—The wind was in a westerly direction nineteen days. Total rainfall, 2.71 inches; this fell on twenty-one days, and is 0.35 inch above the average for the month. The greatest daily fall was 0.33 inch on the 27th; barometer (corrected and reduced), highest reading 30.352 inches on the 7th at 9 A.M., lowest 29.126 inches on the 11th at 9 A.M. Thermometers: highest in the shade, 68° on the 23rd; lowest, 30° on the 19th; mean of daily maxima, 56.19°; mean of daily minima, 39.12°. Mean temperature of the month 47.65°. Lowest on the grass, 30° on the 19th; highest in the sun, 133° on the 11th. Mean temperature of the earth at 3 feet, 49.25°. Total sunshine 151 hrs. 45 min. There were five sunless days.—W. H. DIVERS, *Belvoir Castle Gardens, Grantham*.

WEATHER AT DOWLAIS.—Total rainfall for the past month, 4.23 inches, which fell on twenty-one days; greatest fall, 0.44, which fell on the 25th. Mean maximum temperature, 60.8°; highest reading, 82° on the 23rd; mean minimum, 37°; lowest reading, 26° on the 15th and 16th. Below freezing point on five nights, and was under 40° on eighteen nights. The surrounding hills were covered with snow in the second week, and snow also fell on the 1st of June, with the night temperature down to 32°. There were eight sunless days, the total amount of sunshine only reaching ninety-four hours, or forty-seven less than in April. The wind was in the W. and N.W. on sixteen days, and in the E. and N.E. on eight days, and has been bitterly cold throughout the month. On the 18th and 19th it was blowing quite a gale, and was piercingly cold; quite a repetition of the gale we had in March. On the afternoon of the 22nd we had a very heavy hailstorm, with stones of a very large size, doing a great amount of damage to various foliage, especially Chrysanthemums, the plants afterwards presenting a sorry spectacle.—WM. MABBOTT, *Gwernllwyn House, Dowlais*.

SUPPLYING FLOWERS TO SCHOOLS FROM THE PUBLIC PARKS.—The School Management Committee reported that they had had their attention called by their Chairman to a report as follows from the British Embassy at Berlin, giving the arrangements made in Berlin for supplying primary schools with flowers from the public parks: "In the town gardens here (Berlin), and especially in 'Humboldt-Hain,' flowers are gathered in proportionate quantities during the summer months of the year, and are placed at the disposal of the upper grade and lower grade municipal schools, at their desire, and also at the disposal of private schools for a consideration, for the purpose of furthering the study of botany. The flowers are sent to the schools in especially ordered carts twice a week; they are sent in bundles, each bundle containing fifty specimens of the same species of plant, and only one bundle falls to each botany class. The names of the plants which may be expected during the week are published every Sunday in the public Press. Flowers from the town gardens are not supplied for the decoration of schools, or making presents of them to scholars." The Committee were of opinion that similar arrangements might possibly be made in London, and with a view to achieving that object recommended that letters be addressed to the London County Council and to her Majesty's Office of Works, setting forth the arrangements which were now made in Berlin for supplying flowers from the public parks to the elementary schools, and inquiring whether somewhat similar arrangements could not be made for the benefit of public elementary and other schools in London. On the motion of Mr. Graham Wallas it was decided that letters be addressed to the London County Council and to her Majesty's Office of Works with reference to supplying flowers to schools in accordance with the terms of the report.

— THE SCENT OF TULIPS.—Your note regarding the fragrance of *T. macrospila*, appended to my remarks on late garden Tulips in the Journal of June 2nd (page 460) has been left unnoticed on account of my absence from home. *T. macrospila* is one of the comparatively few fragrant Tulips, and, as such, deserves to be more largely grown, even if it were less beautiful than it is. It would be interesting to know what Tulips are really fragrant. *T. suaveolens* should be sweet-scented, and is so, but, I think, to a less degree than *macrospila*. There is an old brown one I have here which is distinctly fragrant, but I have no name for it, although I think it is only an old garden "breeder," which must have remained unbroken for many years.—S. ARNOTT.

— WAKEFIELD PAXTON SOCIETY.—Programme of meetings for the second quarter—Session 1898. June 11th, Visit to Hebden Bridge for Hardcastle Craggs; 18th, "Hardy Flowers"—choice and interesting kinds, with some specimens, Mr. John Wood, Kirkstall; 25th, Wild Flower Exhibition, Mr. Rd. Ainley, Morley; July 2nd, "Symbiosis and Parasitism," Mr. J. W. D. McPherson, B.A., Wakefield; 9th, "The Strawberry," Mr. J. G. Brown, Wakefield; 16th, the Rose Exhibition, Mr. G. Bott, Walton; 23rd, Visit to Askern and Campsall Hall; 30th, "The Canna," Mr. Arnold S. Nicholson, M.S.A., Wakefield; August 6th, the Carnation and Picotee Exhibition, Dr. Hein, Wakefield; 13th, the Pelargonium Exhibition, Mr. J. Thomas, Wakefield; 20th, "The Lily Order," Mr. W. H. Vere, Milnthorpe; 27th, Visit to Rishworth. For full particulars, apply to Messrs. T. H. Mountain and A. S. Nicholson, the Hon. Secs.

— MESSRS. SUTTON & SONS' EXCURSION.—The annual excursion given to the employes of Messrs. Sutton & Sons of Reading, the Queen's seedsmen, took place on Monday. The destination chosen was Southampton and the Isle of Wight, travelling by way of Newbury, and then over the Didcot, Newbury, and Southampton Railway to Southampton. The weather was wet on the journey down, but fortunately it cleared on arrival at Southampton, and the rest of the day was fine, and the trip most enjoyable. Two steamers were chartered by the firm to convey the party, which numbered 670, to different parts of the Island. The first left for Ryde, Sandown, Shanklin, and Ventnor, and the second for Trinity Wharf, Cowes (for Osborne), Totland Bay, and Ryde. Her Majesty the Queen graciously arranged for the members of the party to visit Osborne, and they were shown over the grounds by Mr. Slater, agent of the Osborne estate, and Mr. Nobbs, head gardener. A fine view was obtained from the terrace at Osborne. The following members of the firm and their relatives accompanied the excursion:—Mr. and Mrs. Martin John Sutton, Mr. Arthur W. Sutton, Mr. Leonard Sutton, Mr. M. H. F. Sutton, Miss Jessie Sutton, Miss Kathleen Sutton and Master Phil Sutton, Master Arthur Pym Sutton. By the liberality of the firm every one of the employes had tickets free, each married man had a ticket for his wife, and every employe was provided with money for refreshments during the day. The return train left Southampton at eight o'clock, arriving in Reading about ten o'clock, all having spent an enjoyable day at the seaside.

— MANGOSTEENS FROM THE WEST INDIES.—Plants of this well-known and delicious tropical fruit have been widely distributed from Kew to the West Indies. The Mangosteen is a native of the Molucca Islands, and is cultivated in the Straits Settlement, Java, and in one or two localities in India and Ceylon. The fruit is regularly shipped from Singapore to the Calcutta market. The first West Indian fruits were produced at the Botanic Gardens, Trinidad, in 1875. In September, 1891, the Governor of that island forwarded some West India Mangosteens for presentation to her Majesty the Queen. The Mangosteen fruited for the first time in the Jamaica Botanic Gardens in 1886 ("Kew Bulletin," 1895, page 79). Last year a box was received at Kew from Mr. J. H. Hart, F.L.S., of Trinidad, containing nine fruits of Mangosteen, which were perhaps the first to reach this country in a condition to allow their merits to be appreciated. Each fruit was separately packed in a compartment with pine wool. Owing to the firm consistency of the outer wall of the fruit it appears to travel well. The fruits were distributed to the Secretary of State for the Colonies and others. The reports received were uniformly favourable. One fruit was sent to Mr. George Munro, one of the leading fruit merchants in Covent Garden, to obtain an opinion as to prospects of shipments of Mangosteens to this country. Mr. Munro reported:—"Yours to hand. I cut open the fruit and showed it to some of my best customers, and they think with me that, if they came in good condition, and not too many at first, a business could be worked up in them. At any rate I should like to try some, and if sent, will do all I can to get a trade for them. They appear to be a fruit that would carry well."—"Kew Bulletin."

— EVAPORATED VEGETABLES.—These form an industry carried on by Mr. F. A. Pulleine of Lobethal, South Australia, who, according to an Australian contemporary, is "making a name for desiccated vegetables and fruits; and, although several others are in the habit of evaporating fruits on a large scale and make a first-class article, he is the only one, so far as we know, who deals with vegetables during the off season for fruits. Carrots, Parsnips, and Potatoes are reduced to about one-eighth part of their original bulk and weight; Onions are brought down to one-twentieth part. Reduced thus in bulk and weight, vegetables can be transported to distant parts at a very moderate cost, and they will keep perfectly good for two or three years. When required for use the articles are soaked in five or six times their weight of water for twenty-four hours, when they are ready for cooking like fresh vegetables."

— BIRMINGHAM GARDENERS' ASSOCIATION.—At the recent monthly meeting, for a display of specimen plants and cut flowers, Mr. W. Dodd, gardener to A. Chance, Esq., Edgbaston, exhibited a seedling small specimen of *Coleus*, which attracted considerable attention from its distinct characteristics. It was of robust habit, and the large leaves suffused with two shades of green and yellow—the latter predominating. The plant was about a year old, and proved to be the only plant possessing the colour in question out of scores of others from the same packet of seed, crossed by himself. As exhibited the plant should lend itself for decorative purposes, and to "groups for effect." Messrs. John Pope and Sons contributed cut blooms of several hardy shrubs, as did Mr. C. R. Bick, gardener to Walter Chamberlain, Esq., Harborne Hall, Harborne; whilst Mr. Walter Jones, Edgbaston (the Chairman), had a tray of very good *Calceolarias*. The proceedings were rendered additionally interesting and instructive by the discussion of various matters pertaining to floriculture amongst several of the members present.

— THE SEED CASE—HOWCROFT & WATKINS *versus* LAYCOCK.—AN IMPORTANT DECISION.—A few weeks ago the Rev. G. T. Laycock, Terwick Rectory, Petersfield, was summoned in the Westminster County Court for payment of an account for seed ordered as Couve Tronchuda, but as supplied proved to be the tall Jersey or "Walking-stick" Cabbage, and therefore worse than useless for the purpose for which the plants were grown. The vendors appear to have relied on the terms published on their invoices:—"Howcroft & Watkins give no guarantee, express or implied, as to description, quality, productiveness, or any other matter of any goods they send out, and will not be in any way responsible for the crop. If the purchaser does not accept the goods on these terms they are at once to be returned." The vendors practically won their case, but the purchaser appealed against the verdict of the County Court Judge. The case was argued before Mr. Justice Day and Mr. Justice Lawrence on the 6th and 7th inst. The former, in giving judgment, was of opinion the County Court Judge was misled. When a thing commercially known as Couve Tronchuda was ordered, that must be sold, and not something else, or there would be an end of contracts, and a new law created by vendors. To that he could not agree, and as Mr. Justice Lawrence concurred the appeal was allowed, and judgment given for Mr. Laycock, with costs in both actions. An appeal was asked for, and granted on the terms that the appellant should be indemnified as to costs. It is undoubtedly an important case, and further developments are awaited.

PRIMULA TRAILLI.

HAVING had another year's experience, I can now speak with certainty as to *Primula Trailli*. I heard from my Indian botanical friend that he had met the collector of the seed sent me as that of *P. Trailli*, and had shown him the gardening papers which I had sent to India, with figures of the plants bloomed here. These, he said, were quite different from *P. Trailli*, that he had collected other *Primula* seed at the same time as *P. Trailli*, that the seed was mixed, and that *P. Trailli* had not come up. I think the best name for the *Primula* which I exhibited would be *P. Monroi* or *P. involucrata* major. It is utterly unlike the form of *P. Monroi* or *P. involucrata*, which I have grown for years. It has when grown close to the glass, and so free from any tendency to be drawn up, stems above 18 inches high with long leaves.

Probably several of the Indian *Primroses* have different forms. Some years ago I exhibited before the Floral Committee a giant form of *P. capitata*, which I suggested should be named *P. capitata* major. This received a first-class certificate on 9th October, 1886; and some time afterwards a nurseryman exhibited a giant form of this *Primrose*, which I suppose the Committee considered different from mine, as this also secured a certificate or award. The Committee only followed the usual precedents in rewarding a fine distinct new form of *Primula* in the case of *P. Trailli*, but I think the name should be changed, and the fact recognised that *P. Trailli* has still to be introduced.—GEORGE F. WILSON.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE fifty-ninth anniversary festival dinner of this well-known charity took place at the Whitehall Rooms, Hotel Metropole, on the evening of Wednesday, June 8th. In every other respect a great success, it was marred by one disappointment—his Grace the Duke of Portland, who had been announced to take the chair, being kept away through illness. The genial presence and typical English face of Sir Oswald Mosley, Bart., of Rolleston Hall, Staffs., in the presidential chair went far, however, to compensate for the absence of his Grace. About 140 gentlemen sat down to dinner, and these constituted a representative body of all persons interested in horticulture. The Very Reverend Reynolds Hole, Dean of Rochester, was a chief and central figure, whilst other well-known faces were those of Messrs. N. N. Sherwood, A. W. Sutton, John H. Laing, H. B. May, Geo. Munro, P. Kay, H. J. Veitch, Jas. H. Veitch, P. Crowley, H. Cutbush, A. F. Barron, W. Goldring, J. Assbee, Geo. Dickson, A. W. Weeks, T. W. Sanders, Geo. Wythes, G. Reynolds, Jas. Hudson, J. F. McLeod, and J. Douglas.

receive at such times from clubs and other benefit societies. He coupled with the toast the name of Mr. H. J. Veitch, their esteemed Treasurer.

Mr. H. J. VEITCH replied at some length, and it was easy to see, by the vigour and earnestness of his manner as he was pressing the claims of the Institution upon his hearers, that his whole heart was in the matter. It had been his privilege, he said, to return thanks for the Society for a number of years, and on each occasion he had been able to report continued progress. In this instance he was glad to be able to do the same. They had now more pensioners on the books than ever before, for the number last January was 168, ninety-three of whom were men and seventy-five women. Eleanor Brown, their oldest pensioner, had lately died, and he cited her case as a good example of what the Institution does for its subscribers. Eleanor Brown's husband joined in 1850, subscribed a guinea a year for sixteen years, and was put upon the fund in 1866. He continued to draw his pension until his death, in 1875, during which time he had received a sum of £144. His wife was elected to the pension in his place, and had received £314, thus making a total sum of £458 which this worthy couple had received. They had a greater number of

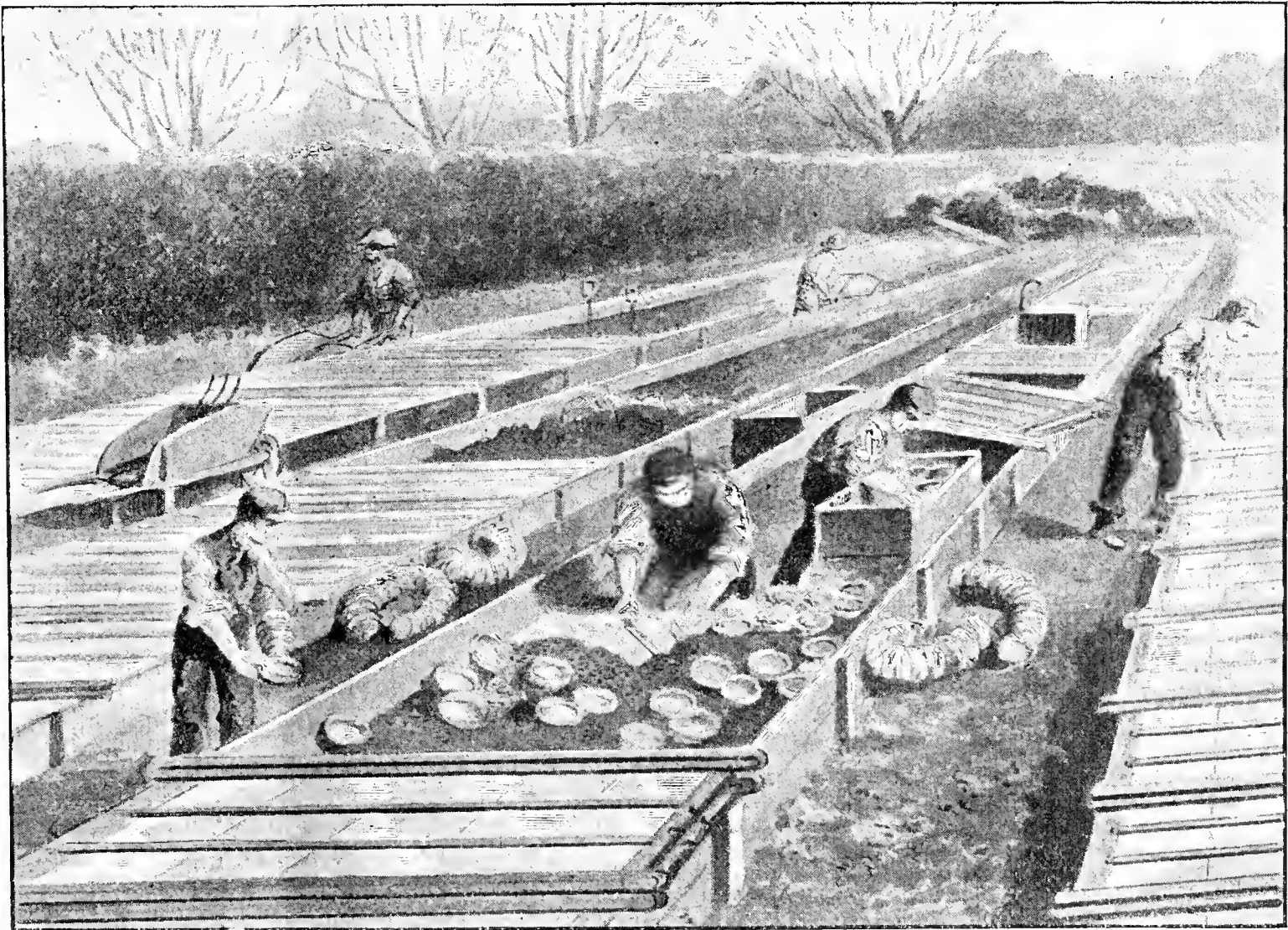


FIG. 95.—GROWING "HOT AND COLD" FOR MARKET. (See page 494.)

Dinner was laid for seven o'clock, and although it was served fairly punctually, a lengthy toast list kept things lively until a late hour.

The loyal toasts of "The Queen," who has been patroness of the Society since 1851; "The Prince of Wales," who is its esteemed patron; "The Princess of Wales, and the rest of the Royal Family," were proposed by the Chairman, and, as usual, heartily received.

Sir OSWALD then proceeded with the toast of the evening—"Continued Success to the Gardeners' Royal Benevolent Institution." First of all he requested the Secretary (Mr. G. J. Ingram) to read the letter sent by the Duke of Portland. This, besides expressing the regret his Grace felt at being unable to be present, spoke of a willingness to take the chair on some future occasion. This, Sir Oswald thought, was matter for congratulation, seeing that one of the finest noblemen in the country was interested in the Institution. Speaking for himself, he said that in his young days he knew very little, and cared less, about horticulture; and, indeed, the first introduction he had to the art was to what he then thought a very nasty tree, the "Birch;" but as he had grown older he had grown wiser. He had tried horses, but had found them expensive, therefore he had practically given them up, and had taken to gardening, thus following one of his ancestors—his grandfather—who had been a great gardener and a great botanist. It behoved everyone, he said, who had the interests of horticulture at heart to try and persuade gardeners to help themselves. To this end employers ought to pay their employees their full wage during sickness, irrespective of any sums they might

applicants for the pension now than formerly, for whereas ten years ago there were twenty-seven, this year fifty-four applied for relief—just double.

He wished that more gardeners would subscribe. One reason for their not doing so was, perhaps, that the Institution was not so well known as it ought to be, but he thought a more likely reason was that the wages of the gardener had not increased in proportion to the rise of wage given in other trades. Mr. Veitch then read three advertisements, of the class for the cow, pig, and poultry-minder and gardener that is so often seen, the wages offered being 15s., 18s., and 21s. weekly respectively in the three advertisements, or lower than those of a town labourer. He did not contend that these were the average situations offered, but cited them to show what was often asked for at an impossible wage.

Speaking of the Victorian Era Fund, he said that they had asked for £5000, and had obtained £4000, which was gratifying, when the number of appeals to charity made during Jubilee year was considered. Of the remaining £1000, necessary to complete the scheme, £200 was already promised. Mr. Veitch then made a strong appeal to the benevolent instincts of his hearers, pointing out that over £3000 was needed annually to discharge the liabilities to pensioners already on the books, to say nothing of working expenses, or any increase in the number of pensions. He commended, both to his audience and himself, the example of a great gardener (Mr. J. W. Thomson), who at his death left legacies to the horticultural charities.

The auxiliary societies at Bath, Wolverhampton, Bristol, and Worcester were doing great things, and they hoped to see one established soon at Reading, where Mr. Arthur W. Sutton was pushing the cause strenuously. In conclusion, he reminded his audience that the Institution was carried on for those who, through unavoidable circumstances, were led in their old days to seek its benefits, and who in their earlier years had done so much to add to the pleasure and gratification of others.

Dean HOLE is so well known for fluency of speech that expectation ran high when he rose to propose the toast of "Gardening." Nor were the expectations disappointed, for the Dean charmed everyone by his boundless store of anecdote and apt simile, not less than by his eloquent delivery. He opened by remarking that the poet Horace had said that "he was a bold man who first went to sea in a boat," that "he must have had a heart of brass and a constitution of oak." Someone else, too, had said that "he was a bold man who first ate an oyster." In his estimation, however, the boldest man was he who asked the Dean of Rochester to speak upon gardening, for how could he know when the very reverend gentleman would stop. Gardeners had a great deal to suffer. They had to talk to people who profess to care about gardens, but who do not really care twopence, and who will talk about the Eton and Harrow match, or anything else rather than gardening. Personally he had had a love for flowers from very early infancy, for it had been stated, with what truth he knew not, that one of his nurses had given warning because he would grab the flowers out of her Sunday bonnet. It was absolutely true, however, that the love for flowers was innate in every human being, that it was a memory of Paradise lost, and a hope of Paradise regained.

He had vivid recollections of his first *Salvia*, for which he gave sixpence. A boy who was bigger than he said the plant was sick, and gave it some beer, and, continued the Dean, "I defied him to mortal combat, and licked him in three rounds."

As he grew older there came a period of apathy and indifference, when the "Mary" he loved best was not *Marigold* nor *Polyanthus*, when his "Annie" was not *Anagallis*, when his "Carrie" was not *Caryota*, when the "Miss" whom best he liked was not *Mesembryanthemum*, and when, even although he loved "*Marguerite*," he gazed upon her with quite a lackadaisical expression. Since then his love for flowers had happily returned to him, never more, please God, to leave him. He had seen the scarlet and yellow fever which had swept over the country, the Tom Thumb *Pelargonium* and the yellow *Calceolaria*, but that had to a large extent passed, although some gardens were still afflicted. Since we had recovered from this terrible ballucination, gardening in all its branches had made enormous progress. Fruits, flowers, and vegetables all showed the same trend. Yet although we lived in a country in which more beautiful flowers could be had than in any other, he was not satisfied. We wanted more gardens, and more beautiful gardens. What advantages were possessed by the various farmers scattered through the land! For himself he loved cows and pigs, not only in the shape of beef and pork, but for the grand manures they produced—a cartload of manure was to him the sweetest of perfumes.

The Dean went on to say that we wanted more beauty of arrangement in our gardens. There were far too many straight lines in gravel walks, and too many instances where the whole of the gardens could be seen from the windows of the dwelling-house. We wanted gardens in which children could play hide-and-seek, and lovers could dream, and he made a strong appeal for the simple, natural, old English garden.

Speaking specially of the Rose, the very reverend gentleman said that he had long loved the Rose, and believed that there was a splendid future before rosarians. He looked to the new class, the Hybrid Tea, introduced by Mr. Bennett, Mr. Dickson, and the Messrs. Paul, to eclipse all other sections of the Queen of Flowers.

For more than half a century he had enjoyed the fellowship and brotherly sympathy of gardeners. He had been an enthusiastic foxhunter, had played bowls and cricket, had dabbled in archery, and had mixed with the keenest votaries of these games, but nowhere had he experienced so much sympathy and fellow feeling as amongst the gardeners. It was all the same, both from coronets and billycocks, in ducal balls and in humble cottages. And when he crossed the Atlantic, there was scarcely an hotel in the United States where he did not find awaiting him a box of Roses or Carnations, tributes of love and fraternity. A gardener was a friend at all times, and a brother born for adversity. The Dean concluded his eloquent address by saying that the work of the Gardeners' Royal Benevolent Institution was fully deserving of the blessing that came upon the prophet of old—"The blessing of him that was ready to perish came upon me, and I caused the widow's heart to sing for joy." Coupled with the toast was the name of Mr. A. W. SUTTON.

That gentleman replied in a few words, in which he drew attention to the fact that the state of their gardens would depend upon their gardeners, hence it was incumbent upon them to do all they could for the gardener. He spoke appreciatively of that standard work, "*The History of Gardening in England*," written by the Hon. Alicia Amherst, now Mrs. Evelyn Cecil. The clergy had done much to advance the cause, and in addition to the Dean of Rochester, gentlemen like the Rev. W. Wilks, Rev. G. Engleheart, and Rev. H. D'Ombraim had achieved much. The members of the Royal Family were great gardeners, and he instanced her Majesty's love for it as exhibited by the way in which, according to her express instructions, the nine little gardens at Osborne, formerly belonging to the young Princes and Princesses, were still cared for, and the produce duly taken to Her Majesty's table. With regard to the proposed branch society at Reading, he thought that Mr. C. E. Keyser of Aldermaston would become its president.

Mr. GEO. MUNRO then gave "Our Country Friends;" the first time, he said, that it had ever been proposed there as a toast. The work these auxiliaries were doing could not be valued too highly, for they were interesting people who have hitherto been inclined to regard the Institution as a London one simply. He could not refrain from mentioning in this connection Mr. White of Worcester and Mr. George Dickson of Chester, both of whom had worked hard and consistently for the Society. It was painfully instructive to learn, however, how comparatively little the Institution was known, for while there was one county with 183 subscribers, there were eleven that had less than ten each, and three counties with only one subscriber in each. This only showed what a lot of fallow ground there was to break up, what a lot remained for them to do. Mr. GEO. DICKSON, whose name was associated with the toast, responded very briefly.

The amount of the evening's subscriptions was then announced by the Secretary, and was found to reach a grand total of £2300, inclusive of subscriptions and donations to the Institution and the Victorian Era Fund. The following are the chief subscribers to this very gratifying total:—His Grace the Duke of Portland, 50 guineas; Sir Oswald Mosley, donation 50 guineas and annual subscription £10; Messrs. Rothschild, 100 guineas; Mr. Coleman, 50 guineas; Messrs. Hurst and Son, £20; Mr. N. N. Sherwood, £50; Mr. W. Sherwood, 5 guineas; Mr. E. Sherwood, 5 guineas; Miss Sherwood, 5 guineas; Messrs. Dickson and Robinson, £35; Mr. A. W. Sutton, £50; Mr. M. H. F. Sutton, £25; Messrs. Jas. Veitch & Son, Ltd, £20; Mr. H. J. Veitch, £50; Mr. Leonard Sutton, £50; Mr. G. Munro (list), £131; Baron Schröder, £20; Mr. A. Wilson, £20; Lord Wantage, 10 guineas; Mr. T. W. Bond, 14 guineas; Mr. Geo. Norman, £15 5s.; Mr. W. Thomson, 20 guineas; Mr. G. Maycock, £10; Mr. N. C. Cohen, 5 guineas; Mr. P. Blair, £5; Mr. W. Crump, £20; Dean Hole, £5; Mr. W. Jinks, £18 10s.; Mr. W. Y. Baker, 13 guineas; Mr. Chas. Turner, 5 guineas; Mr. B. F. Smith, 2 guineas; Mr. P. Crowley, 6 guineas; Messrs. Wrench & Son, 5 guineas; Mr. G. H. Richards, 10 guineas; Messrs. Fisher, Son and Sibray, 10 guineas; Mr. W. J. Corrie, 5 guineas; Mr. J. F. McLeod, 2 guineas; and Worcester Auxiliary, £70. It was announced that the list opened by Mr. Geo. Dickson was not yet completed, but when closed it would total from £50 to £100.

At the close Mr. N. N. SHERWOOD invited all to drink to the health of their Chairman, Sir Oswald Mosley, who was a great patron of horticulture. His gardens at Rolleston were opened frequently to the public, and in this and other ways he was the *beau ideal* of a real old English country gentleman. In replying, Sir Oswald expressed his pleasure at being amongst them, and assured them that if at any time any of them should be in the neighbourhood of Rolleston, it would give him great pleasure to show them round himself. In conclusion he spoke of the work of their Secretary, Mr. Ingram, in highly appreciative terms.

The speeches and toasts were agreeably interspersed with, and varied by vocal and instrumental music, Mr. Herbert Schartau, as on other occasions, proving himself a successful entertainer, as well as organiser of entertainers. The songs by Mesdames J. Lucie Johnstone, and Edith Serpell, and Messrs. Schartau and Chas. Chilley, were much applauded, whilst the really humorous sketch by Mr. Walter Churcher did not lack its setting of responsive laughter. The tables were handsomely decorated with flowers and plants supplied by Messrs. Sander & Co of St. Albans.

A HOLIDAY TOUR.

DURING a recent visit to Kirkbean parish in Kirkcudbrightshire, on my way to London, I was shown near Southwick (the residence of Sir Mark J. Stewart, M.P.) a magnificent Silver Fir with a trunk 18 feet in circumference, and above 80 feet high, rivalling, if not eclipsing, the famous variety at Traquair, in Peeblesshire, which I have previously described in the *Journal of Horticulture*. On the same day I visited the beautiful gardens at Southwick and Cavens; the former of which is celebrated for Anemones and Begonias, the latter for the culture of Oriental Lilies. The head gardener to A. Oswald, Esq., at Cavens told me he had a specimen of *Lilium giganteum* last year which grew upwards like a tree to a height of 13 feet, and produced twenty-one perfectly developed flowers. It is seldom that this great Himalayan Lily attains in any region to such imposing dimensions.

I was accompanied to the gardens of Cavens House by your accomplished contributor, Mr. S. Arnott, whose collection of alpine and herbaceous flowers at Carsethorn on the Solway I found, as I had anticipated, wonderfully attractive. For brightness and fragrance the garden of Mr. Arnott could not easily be surpassed. His late flowering Tulips, Narcissi, and Auriculas were especially impressive. In his congenial company I spent many hours, on a day of brilliant sunlight and perfect peace, examining and admiring his flowers, which have come to him from all parts of the world.

During the same week I re-visited several of the great English horticulturists, including Mr. Wm. Paul of Waltham Cross, who showed me several new and highly interesting Roses of his own, raised by himself; Mr. T. F. Rivers of Sawbridgeworth, Mr. F. Sander of St. Albans, Messrs. Veitch and Sons and Mr. Wm. Bull of Chelsea, Mr. J. S. Baker of Kew, who has a veritable genius for plant classification; and Mr. Harry Turner, who showed me the grand collection of Carnations, Roses, and Pelargoniums at the Royal Nurseries, Slough.—DAVID R. WILLIAMSON.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—JUNE 14TH.

THE Drill Hall on Tuesday presented a very gay appearance, and was well filled with exhibits of a diversified character. Carnations from Dover House were grand, as were Cannas, Pæonies, and Rhododendrons from various growers. Orchids were of great interest, but not very numerous.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with Rev. W. Wilks, and Messrs. T. F. Rivers, J. Cheal, J. Willard, A. F. Barron, G. Norman, F. Q. Lane, J. Smith, H. Balderson, G. Wythes, G. Woodward, T. G. Miles, A. Dean, and J. Wright.

Mr. J. Prowse, Hall Barn Gardens, Beaconsfield, Bucks, sent seed of a second early Cabbage to Chiswick last year. It was sown in August, and plants were placed before the Committee. The hearts were medium-sized, conical, and tender-looking, with few outside leaves. The variety is named *Beaconsfield*, and was granted an award of merit.

Mr. S. Mortimer, Rowledge, Farnham, sent a box of splendid fruits of Cucumber "*Sensation*," which was granted a certificate in 1896, and this was confirmed. Mr. Mortimer also sent a box of fruits of his new Cucumber, *The Keeper*. It resulted from a cross between Improved Telegraph and Duke of Edinburgh. Fruits of good length, uniform, very dark, with prominent spines, and covered with a meal-like bloom. Some of the fruits had been kept since the Temple Show, and seemed practically as firm as ever. It should prove a valuable market Cucumber if a free bearer. An award of merit was unanimously granted.

Mr. E. Beckett, Elstree House, sent Spinach with leaves of extraordinary size, measuring 16 x 15 inches. A cultural commendation was granted to Mr. Beckett, and the variety was recommended to be tried at Chiswick. Name, "*The Carter*."

Mr. Empson, gardener to Mrs. Wingfield, Ampthill, sent fruits of a new medium sized neatly netted Melon, *Empson's Seedling*, obtained from Anthony's Favourite and Eastnor Castle. It is a white-fleshed variety, extremely tender, juicy, sweet, and refreshing. An award of merit was granted without a dissentient.

Mr. James Hudson sent from Gunnersbury House fine highly coloured fruits of Lord Napier Nectarine, for which a cultural commendation was promptly awarded. He also sent a box of Guigne Annonay Cherry, the fruits gathered from a tree against a wall in the open air. It was said to be the best in quality of all early Cherries, being ten days in advance of Early Rivers, though not so large and dark. As the fruits were marked "not to be tasted" the proposal of an award of merit for the variety could not be considered.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. J. Fraser, H. B. May, G. Nicholson, J. H. Fitt, G. Stevens, W. Howe, J. Hudson, J. F. McLeod, J. Fraser (Kew), W. Bain, G. Gordon, J. D. Pawle, E. Mawley, C. E. Shea, C. E. Pearson, E. T. Cook, E. Beckett, C. Blick, G. Paul, H. J. Jones, C. T. Druery, J. W. Barr, H. S. Leonard, C. E. Cant, and T. W. Sanders.

Hardy flowers in large showy bunches came from Messrs. Collins Bros., Waterloo Road. They included Geums, Gaillardias, Irises, and a charming single Pyrethrum called *Monarch*. Irises formed the backbone of the group sent by Messrs. J. Veitch & Sons, Chelsea. They were mainly forms of *Iris germanica*, and included *Agamemnon*, *Nationale*, *Darius*, Mrs. H. Darwin, *Pallida*, *Dalmatica*, *Garrick*, and others. Double Pyrethrums were also very fine, as were *Eremuri* and *Aquilegias*. Messrs. Veitch staged also *Hydrangeas* and *Hibiscus*, with *Gloxinias Philadelphus*, *Mont Blanc*, and others.

The group of Cannas sent by Messrs. H. Cannell & Sons, Swanley, made a very bright display, as the well grown plants were carrying finely formed flowers of very rich colour. Amongst the best were *Queen Charlotte*, *Duchess of York*, *Germania*, *Aurore*, *Milne Redhead*, *aurea*, *Incendie*, *Paul Bruant*, *Beauté Poitevine*, and *Comte de Bouchand*. The Swanley firm also sent a handsome exhibit of double *Begonias*, in which *Lady Blythwood*, *Myra*, Mr. Stirling Stewart, *Souvenir de P. Notting*, Mrs. Dunning, and *Lady Musgrave* were very fine. Several bunches of *Aquilegias* in variety completed this firm's stand. Mr. H. B. May, Upper Edmonton, was represented by a beautiful group of Ferns. The plants were splendidly grown, and comprised sixty varieties, all raised by Mr. May. The same firm also staged a showy yellow *Tropæolum* named *Sunlight*, and *Zonal Pelargonium Milfield Rival*.

Messrs. Sander & Co., St. Albans, made up an attractive exhibit of *Acalypha Sanderi*, *A. Godseffiana*, *Mikania Sanderi*, *Globba calophylla*, *Caladiums* Mrs. F. L. Ames, Lord Annesley, *Lady Warwick*, and Mrs. Miller Mundy, and *Begonia* Mrs. F. Sander. Mr. F. Perkins, Leamington Spa, exhibited a group of his new *Carnation Primrose Queen*. The variety appears to be very useful for cutting purposes. It is slightly fragrant. Messrs. Barr & Sons, King Street, Covent Garden, staged a very large and comprehensive collection of Irises. The most notable were *i. aphylla Gazelle*, *i. variegata Malvina*, *i. v. Regina*, *i. v. Abon Hasson*, *i. neglecta Willie Barr*, *i. Humboldt*, *i. lusitanica*, *i. dalmatica*, *Princess Beatrice*, and *i. pallida*. The same firm also staged an attractive group of hardy flowers, comprising bright Pyrethrums, Geums, *Ranunculus acris flore-pleno*, *Muscari plumosa monstrosum*, *Delphiniums* in variety, single Pæonies, and a choice collection of *Ixias*.

Messrs. F. Miller & Co., 267, Fulham Road, staged a very fragrant exhibit of Miller's Civic Mignonette, spring sown. The plants were dwarf, and the spikes large; the group was flanked with single *Petunias* of the well known market type. Messrs. J. Cheal & Sons, Crawley, staged an exhibit of hardy flowering trees and shrubs, also groups of ornamental foliage. The chief objects were *Weigela amabilis alba*, and *W. græwe-*

genii, *Genista Andreanus*, *Eurybia Gunni*, *Spiræa Van Houttei*, *Cheal's New Golden Laburnum*, and *Fraxinus argentea variegatus*.

The centre of the hall was filled with a very large group of Carnations of the *Malmaison* type by J. P. Morgan, Esq., Dover House, Roehampton (gardener, Mr. J. F. McLeod). The arrangement was excellent, the huge plants being relieved with tall *Kentias*, while a groundwork of *Maidenhair Ferns*, *Spiræa*, *Lycopodiums*, and *Caladiums* effectually hid the pots. Messrs. R. Wallace & Co., Colchester, had a very gay group of hardy plants on view. The Irises were very prettily arranged in baskets. *I. Sanspareil*, Miss Maggie, Chelles, Mrs. Darwin, *aphylla*, and Mrs. Newell were most notable in the *germanica* division. The Spanish types were well represented. *Anthericum liliastrium major*, a pure white form; *Lilium rubellum*, an attractive species; various forms of *Liliums*, all contributed to make an attractive exhibit.

Messrs. Kelway, Langport, exhibited their Pæonies, Pyrethrums, and *Delphiniums* in all their gorgeous beauty. The best Pæonies were *Cavalleria rusticana*, *Bioni*, *Maud Wild*, *Limosel*, and *Duchess of Teck*. Pyrethrums were very bright. The double forms of *Melton*, *Aphrodite*, *Pericles*, *Ovid*, *Alfred Henderson*, and *Carl Vogt*. In the single forms, the bright crimson form *Jas. Kelway* was well represented. *Delphiniums* *Aspiration*, *Princess May*, *True Blue*, *Monument*, *Albert Edward*, and *Amyas Leigh* were remarkably fine.

Messrs. Wm. Paul & Son, Waltham Cross, had an extensive display of Rhododendrons, grown at their Loughton Nurseries on loam. The colours were very bright and fresh, and the foliage all that could be desired. The same firm also staged baskets of the double Scotch Roses in variety, also some of the single forms. The miniature *Provence Spong*, a bright pink, was very showy. Hybrid Sweet Briars, Austrian Briars, and the single forms of *Rosa rugosa alba* and *rosea* completed the display. Messrs. Paul & Son, Cheshunt, staged one of their well-known collections of dwarf Cannas, grown in 5 and 6-inch pots. The best varieties were *Kate Vaughan*, *Flamingo*, *L. E. Bailey*, *Lady Fandel Phillips*, *Professor Baker*, *Sir Trevor Lawrence*, *Wm. Tofts*, and *Mr. Jas. Bailey*. Hardy herbaceous plants were also in evidence. *Pyrethrum Hamlet*, *Geum minatum*, *Aquilegia hybrids*, *Campanulas*, and *Thalictrum aquilegifolium rubrum*, amongst others, were well shown. Special mention is deserved by the huge spikes of double white *Rocket*, *Hesperis matronalis alba plena*, rivalling in proportions and purity the ordinary white Stocks. It is a subject that should be more frequently met with in herbaceous borders.

Mr. J. Russell, Richmond Nursery, Richmond, contributed to the rich display of hardy flowers with good bunches of Irises, *Campanulas*, *Pyrethrums*, *Oriental Poppies*, *Delphiniums*, *Achillea mongolica*, *Lilium umbellatum*, and *Heuchera sanguinea*, the display making a very bright exhibit. A magnificent basket of Carnations came from the Marquis of Salisbury, Hatfield (gardener, Mr. Norman). The varieties were *Miss Audrey Campbell* and *King Arthur*. The yellow plants were a mass of bloom, while the specimens of *King Arthur* fully maintained the reputation of this variety. Mr. Martin Smith, Hayes (gardener, Mr. C. Blick), exhibited a few of his new Carnations, *Lady Hermoine*, a border form, salmon pink; *King Oscar*, a red silvery *Malmaison*; and *Emma*, also a rose pink *Malmaison*.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, de B. Crawshay, R. B. White, H. M. Pollett, H. Little, A. H. Smee, H. J. Chapman, W. H. Young, E. Hill, T. W. Bond, C. Winn, W. Cobb, E. Handley, S. Courtald, T. B. Haywood, J. T. Gabriel, J. G. Fowler, W. H. White, and J. Douglas.

Messrs. J. Veitch & Sons, Ltd., occupied their customary position with an effective group of Orchids. There were not a great number of plants, but those shown were good, and comprised *Lælio-Cattleya Hippolyta*, *Tricopilia suavis alba*, *Lælio-Cattleya Canhamiana*, *Cattleya Cænone*, *C. Mossiæ*, *Reineckiana*, *Epiphronitis Veitchi*, *Disa langleyensis*, and *Disa Veitchi*. In addition to those enumerated Messrs. Veitch sent *Cattleya Mendeli virginalis*, *Lælio-Cattleya Canhamiana superba*, *L.-C. Endora splenders*, *L.-C. Endora alba*, *Epi-Cattleya radiata Bowringiana*, *Lælio-Cattleya Hippolyta aurantiaca*, and *Cattleya Gertrude*. Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, sent *Dendrobium Bensoniæ*, *Odontoglossum crispum*, *O. elegantius*, *Baroness Schröder*, *Phalænopsis Aphrodite*, *Disa kewense*, *Cœlogyne Schilleriana*, *Geodorum Augusta*, and *Bulbophyllum Lobbi*, Burford variety. A group of varieties of *Odontoglossum crispum* came from Messrs. J. McBean & Sons, Cookbridge, Sussex. Mr. H. J. Chapman, gardener to R. I. Measures, Esq., Camberwell, staged *Lælia purpurata Ernesti*. Mr. J. Hudson, Gunnersbury House, sent a magnificent specimen of *Lælia purpurata* carrying ten spikes of good flowers.

Mr. H. Whiffen, gardener to J. Bradshaw, Esq., The Grange, Southgate, staged a few Orchids, comprising *Odontoglossums*, *Lælia tenebrosa*, *Cattleya Mossiæ Reineckiana*, and *C. M. Admiral Bradshaw*. Mr. W. H. Young, Orchid grower to Sir F. Wigan, Bart., Clare Lawn, East Sheen, was represented by *Cattleya Mossiæ*, *C. M. maxima*, *Lælio-Cattleyas superba elegans*, *Canhamiana*, *Iolanthe* and *Lady Wigan*, *Cymbidium tigrinum*, *Lælia tenebrosa*, and *Scuticaria Hadweni*. Two forms of *Lælia purpurata*, one of which had the varietal name of Mrs. de Barri Crawshay, and *Cattleya Mendeli Sprite*, were shown by Mr. de Barri Crawshay, Rosefield, Sevenoaks, and Mr. W. J. Empson, gardener to Mrs. Wingfield, Ampthill, sent *Cattleya Mossiæ Wingfield's* variety.

A charming group of Orchids came from Messrs. Stanley Mobbs and Ashton, Southgate, in which the flowers were well diversified, of good form, and bright in colour. There were *Lælia purpurata* in variety, *Cattleya Mossiæ*, *Cypripedium Sir Thos. Lipton*, *C. Evenor Southgate* variety, *C. Gertrude Hollington*, *Dendrobium Victoria Regina*, and others.

Messrs. F. Sander & Co., St. Albans, exhibited *Lælio-Cattleya* Lily Measures, L.-C. Duke of York, Thunias, and Sobralias Mons. L. Linden sent from Brussels *Odontoglossum crispum* Le Czar, O. c. Morning Star, and O. c. Dallemagnæ. A lovely crispum named Prince of Wales came from Messrs. H. Low & Co., Bush Hill Park; while G. H. Bird, Esq., West Wickham, sent *Odontoglossum crispum* Bonnyanum.

H. Druce, Esq., Circus Road, N.W., sent under a glass case four *Cypripediums* named *Walkerianum*, from a cross between *concolor* and *bellatulum*; Mrs. H. Druce, from a cross between *niveum* and *bellatulum* and *bellatulum* *Drucianum*. In one form of *Walkerianum* the *bellatulum* parentage predominated, while in the other *concolor* was in the ascendant.

MEDALS.—*Floral Committee.*—Silver-gilt and Flora medals to Messrs. J. F. McLeod and H. Cannell & Sons; silver Flora medals to Messrs. Kelway & Son, and H. B. May. Silver-gilt Banksian medal to Messrs. Barr & Son, and silver Banksian medals to Messrs. W. Paul & Son, R. Wallace & Co., and G. Norman. *Orchid Committee.*—Silver Flora medals to Messrs. J. Veitch & Son, and Stanley Mobbs & Ashton; and silver Banksian medals to Messrs. J. Hudson and H. Low & Co.

CERTIFICATES AND AWARDS OF MERIT.

Begonia Commodore Dewey (H. Cannell & Sons).—A grand double scarlet variety. The flowers are of splendid shape (award of merit).

Begonia Mrs. F. Sander (F. Sander & Co.).—A fine *Begonia*. There are three distinct colours in the leaves, these being brown immediately round the stalk, silvery rose beyond that, then bright green with a brown edging (award of merit).

Caladium Lord Annesley (F. Sander & Co.).—This has resulted from a cross between *C. albanense* and a garden hybrid, and of a distinct type. The leaves are very long, and come to a sharp point. The central colour is dull crimson, and there is a band of dark green round the edge (award of merit).

Calochortus Purdyi (R. Wallace & Co.).—A beautiful *Calochortus*, of which the cream colour is almost wholly obscured by the white hairs. At the base of the flower are numerous black spots (first-class certificate).

Canna Mosaic (Paul & Son).—A good variety with yellow and scarlet flowers of fine shape (award of merit).

Canna Mrs. W. Marshall (Paul & Son).—A handsome yellow flower with numerous scarlet spots on the flower (award of merit).

Cattleya Mossiæ Madonna (Stanley Mobbs & Ashton).—The colour of this is almost pure white in the sepals, petals, and front lobe and edges of the lip. The central portion of the lip is purplish rose, and the throat yellow and crimson (award of merit).

Epi-Cattleya radiato-Bowringiana (J. Veitch & Sons).—The specific name of this bigeneric hybrid tells its colour. The flower partakes of both parents. The colour is dull bluish-purple, the stripes on the lip being brown (award of merit).

Gloxinia Galatea (J. Veitch & Sons).—This is a chastely beautiful variety, of which the colour is white, each lobe being surrounded by a band of pale blue. The throat is yellowish-green (award of merit).

Gymnogramma Alstoniæ superba (H. B. May).—This is a fine form, the gold of the fronds being very effective and conspicuous (award of merit).

Lælia purpurata Ernesti (H. J. Chapman).—The sepals and petals of this variety are pure white in colour and of good form. The lip is very pale blush in front, deepening to rose towards the throat, which is yellow with rose veins (award of merit).

Lælio-Cattleya Canhamiana superba (J. Veitch & Sons).—Superb indeed is this variety. The substantial petals and sepals are rich rose, and the grandly formed fimbriated lip bright crimson, paling slightly towards the front lobes (award of merit).

Lælio-Cattleya Duke of York (F. Sander & Co.).—This bigeneric hybrid resulted from a cross between a dark form of *Lælia elegans* and *Cattleya Bowringiana*. The colour is a deep claret purple, rather dull over the whole flower save the lip, which is bright (first-class certificate).

Lælio-Cattleya Eudora splendens (J. Veitch & Sons).—One of the handsomest Orchids in the show. The colour of the sepals and petals is soft rose, while the large open lip is deep velvety maroon. The throat is pale yellow in the front, with rose veins deeper (first-class certificate).

Lælio-Cattleya Hippolyta aurantiaca (J. Veitch & Sons).—This is a lovely variety, in which the colour is bright orange. The lip is of the same colour as the other portion of the flower, but is striped with crimson (award of merit).

Mikania Sanderi (F. Sander & Co.).—This is a conspicuous plant, with sharply pointed, heart-shaped leaves. The colour is green and very dark blackish brown, the whole surface being velvety (first-class certificate).

Odontoglossum crispum Prince of Wales (H. Low & Co.).—A grand crispum in form, size of flower, and of spike. The colour is pure white, except an occasional flush of rose. The beautiful lip is white on the front lobe, with brown blotches in the centre (first-class certificate and silver Flora medal).

Odontoglossum elegantius Baroness Schröder (W. H. White).—This is a lovely yellow flower, with abundant bright brown spots and blotches. The front lobe of the lip is white (award of merit).

Pæony Ella C. Kelway (Kelway & Son).—A superb variety. The large double flowers vary in colour from very pale blush to rich lively rose (award of merit).

Philadelphus coronarius Mont Blanc (J. Veitch & Sons).—A beautiful variety with pure white flowers profusely borne above the light green leafage. The height of the plant does not exceed 18 inches (award of merit).

Pyrethrum Lady Kildare (Kelway & Son).—A fine double flower, of a peculiar pale shade of rose, the centre being orange (award of merit).

Pyrethrum Monarch (Collins Bros.).—A fine single variety with rose coloured flowers of good size (award of merit).

Scuticaria Hadweni (W. H. Young).—The yellowish green ground of the sepals and petals of this Orchid is almost obliterated by the large patches and bars of brown. The hairy semi-open lip is white with splashes of rose (award of merit).

RANUNCULUS CORTUSÆFOLIUS.

THIS plant, "W. G. R.," which has been designated as "unquestionably the handsomest of all the Buttercups known to botanists," is a native of Madeira and the Canary Islands, being confined, it is said, to one locality in Madeira—viz., Ribeira Frio. It has been known for a considerable time, and has been described by various authorities under the



FIG. 96.—RANUNCULUS CORTUSÆFOLIUS.

names *R. Teneriffæ*, *R. grandifolius*, and *R. heucheraefolius*; but that given at the head of this note is the now accepted title. It is generally considered to be hardy, though frame protection is advised during the winter. The leaves are heart-shaped, 6 inches or more in diameter, slightly lobed, with a toothed margin. The flowers are large, fully 2 inches in diameter, of a bright golden yellow colour, are very numerous, and are borne in a panicle 2½ feet high.

Referring to its culture, a well-known gardener writes:—"To grow this *Ranunculus* successfully it must be kept in a cold airy pit or frame. When it starts in spring it should be potted firmly in a compost of half good stiff loam, a fourth of leaf soil and sand, the remainder horse droppings from an old Mushroom bed. When the pots are full of roots, weak liquid manure should be given, to encourage it to throw up strong flower spikes, and assist it to make strong roots for another season. To increase the stock it should be divided as soon as it commences growing, as I have not yet succeeded in raising seedlings. It continues in bloom from six to eight weeks."

ROYAL NATIONAL TULIP SOCIETY.

[MIDDLETON.]

THE Northern Show of the Tulip Society was held in the Free Library, Middleton, near Manchester, on May 31st. The large room, lent free of charge by the corporation, was tastefully decorated with foliage plants and Orchids, lent by Mr. Alderman Halliday and Mr. J. W. Bentley. The show of Tulips was not up to the standard of late years. The wretched weather experienced in May prevented the development of flowers grown in late situations, consequently some exhibitors did not turn up at all, and others could only show very young flowers, which, as the day was cold and sunless, refused to expand, and were therefore relegated by the judges to low positions. Messrs. Needham, Prescott, and Horner, however, staged blooms which were fully grown and of excellent quality, and the first-named fully deserved his commanding position. Flamed flowers were especially well shown, especially that fine bizarre Samuel Barlow, which triumphed over Sir J. Paxton, which has held undisputed first place for forty years. Aglaia and Triomphe Royale were in fine form, while Annie M'Gregor, shown by Mr. Prescott, was well nigh perfect. Talisman and Chancellor were the best among the byblœmens, and old Duchess of Sutherland was in good form. Feathered dowers were not good with the exception of bizarres. Trip to Stockport, which obtained premier honours, did not deserve its place, the inner petals being half as long again as the outer ones. Breeders, with the exception of Mr. Horner's, were quite unworthy of a national show, being either weather marked or merely buds. There were not many novelties of note. Mr. Needham showed a fine newly broken feathered byblœmen, which he calls "Mary." Mr. Bentley had Charles H. Hopwood, heavy scarlet feather on a fine yellow ground, and Mr. Horner showed a few of his lovely breeder seedlings. When, however, one considers the wretched spring, the worst Tulip growers have experienced for many years, the wonder was, not that the flowers were below the average in numbers and quality, but that so many beautiful examples could be staged at all. The Judges were Messrs. Housley (Stockport), J. Woodhead (Stalybridge), and B. Simonite (Sheffield), and following is a complete list of their awards.

RECTIFIED TULIPS.

Class 1. *Twelve dissimilar Tulips, two feathered and two flamed in each class.*—First, Mr. C. W. Needham, Royton, with Samuel Barlow and Sir Joseph Paxton, flamed bizarres; Attraction and Wm. Wilson, feathered bizarres; Chancellor and Talisman, flamed byblœmens; Elizabeth Pegg and Trip to Stockport, feathered byblœmens; Mabel and Triomphe Royale, flamed roses; and Heroine and Julia Farnese, feathered roses. Second, Mr. A. Moorhouse, Wakefield, with Sir Joseph Paxton and Dr. Hardy, flamed bizarres; Sir Joseph Paxton and Wm. Annibal, feathered bizarres; Talisman and Lord Denman, flamed byblœmens; Trip to Stockport and Mrs. Hepworth, feathered byblœmens; Mary Jackson and Madame St. Arnaud, flamed roses; Modesty and Heroine, feathered roses. Third, Mr. J. W. Bentley, Middleton, with Sir Joseph Paxton and Samuel Barlow, flamed bizarres; Wm. Wilson and Charles H. Hopwood, feathered bizarres; Chancellor and Talisman, flamed byblœmens; Bessie and Guido, feathered byblœmens; Annie M'Gregor and Mabel, flamed roses; Alice and Mrs. Atkin, feathered roses.

Class 2. *Six dissimilar Tulips, one feathered and one flamed in each class.*—First, Mr. Needham, with Sir Joseph Paxton, flamed; Attraction, feathered; Talisman, flamed; Trip to Stockport, feathered; Mabel, flamed; and Heroine, feathered. Second, Mr. Bentley, with Samuel Barlow, flamed; Duke of Devonshire, feathered; Chancellor, flamed; Bessie, feathered; Annie M'Gregor, flamed; and Mrs. Atkin, feathered. Third, Mr. Mellor, Wakefield, with Lord Stanley, flamed; Sir Joseph Paxton, feathered; Talisman, flamed; Bessie, feathered; Mabel, flamed; and Alice, feathered. Fourth, Mr. Moorhouse, with Dr. Hardy, flamed; Sir Joseph Paxton, feathered; Bessie, flamed; Mrs. Hepworth, feathered; Mary Jackson, flamed; and Mrs. Lea, feathered. Fifth, Mr. Dymock, Stockport, with Sir Joseph Paxton, flamed; Sulphur, feathered; Lord Denman, flamed; King of the Universe, feathered; Annie M'Gregor, flamed; and Miss B. Coutts, feathered. Sixth, Mr. J. H. Wood, Middleton, with Sir Joseph Paxton, feathered and flamed; Lord Denman, flamed; Talisman, feathered; Mabel, flamed; and Heroine, feathered.

Class 3. *Six dissimilar Tulips, one feathered and one flamed (for small growers).*—First, Mr. W. Prescott, Bedford Leigh, with Sir Joseph Paxton, flamed; Lord Lilford, feathered; Talisman, flamed; E. Pegg, feathered; Annie M'Gregor, flamed; and Lea's Seedling, feathered (only one exhibit).

Class 4. *Three Feathered Tulips, one of each class.*—First, Mr. Needham, with Attraction, E. Pegg, and Julia Farnese. Second, Mr. Moorhouse, with Field Marshal, King of the Universe, and Modesty. Third, Mr. Prescott, with Lord Lilford, Mrs. Pickerill, and Modesty. Fourth, Mr. Mellor, with Lord F. Cavendish, Geo. Hardwick, and Lizzie. Fifth, Mr. Bentley, with Albert, Trip to Stockport, and Alice. Sixth, Mr. Wood, with Sir Joseph Paxton, Alice Grey, and Modesty.

Class 5. *Three flamed Tulips, one in each class.*—First, Rev. F. D. Horner, Burton-in-Lonsdale, with Samuel Barlow, Talisman, and Mabel. Second, Mr. Prescott, with Sir Joseph Paxton, Lord Denman, and A. M'Gregor. Third, Mr. Needham, with Sir Joseph Paxton, Talisman, and Mabel. Fourth, Mr. Bentley, with Samuel Barlow, Chancellor, and A. M'Gregor. Fifth, Mr. Mellor, with Dr. Hardy, Talisman, and A. M'Gregor. Sixth, Mr. Dymock, with Dr. Hardy, Talisman, and Mabel.

Class 6. *Two Tulips, one feathered and one flamed of any class, maiden growers only.*—First, Mr. G. Eyre, Ripley, Derby, with Sir Joseph Paxton and Duchess of Sutherland. Second, Mr. W. Mallinson, Middleton, with Mabel and Modesty. Third, Mr. T. Buckley, Stalybridge, with Sir Joseph Paxton and Modesty.

Class 7. *Two Tulips, one feathered and one flamed of any class.*—First (Samuel Barlow Memorial Prize), Mr. Needham, with Samuel Barlow and Mary. Second, Rev. F. D. Horner, with Sir Joseph Paxton and Modesty. Third, Mr. Prescott, with Sir Joseph Paxton and Lord F. Cavendish. Fourth,

Mr. Mellor, with Sir Joseph Paxton and Lord F. Cavendish. Fifth, Mr. Wood, with Prince of Wales and Bessie. Sixth, Mr. Bentley, with Samuel Barlow and William Annibal.

Class 8.—Single Blooms.—

Feathered Bizarres.

- 1 Mr. Prescott, with Lord Lilford
- 2 Mr. Needham, with Wm. Wilson
- 3 Mr. Needham, with Attraction
- 4 Mr. Prescott, with Lord Lilford
- 5 Mr. Needham, with Luke Ashmole
- 6 Mr. Mellor, with Lord F. Cavendish
- 7 Mr. Needham, with Richard Headly
- 8 Mr. Bentley, with Sulphur
- 9 Mr. Needham, with Rev. F. Symons
- 10 Mr. Bentley, with Sir Joseph Paxton

Feathered Roses.

- 1 Mr. Prescott, with Modesty
- 2 Mr. Needham, with Comte de Vergennes
- 3 Mr. Moorhouse, with Mrs. Lea
- 4 Mr. Moorhouse, with Modesty
- 5 Mr. Prescott, with Industry
- 6 Mr. Needham, with Heroine
- 7 Mr. Needham, with Annie M'Gregor
- 8 Mr. Bentley, with Rosetta
- 9 Mr. Bentley, with Julia Farnese
- 10 Mr. Bentley, with Alice

Flamed Byblœmens.

- 1 Mr. Bentley, with Adonis
- 2 Mr. Needham, with George Edward
- 3 Mr. Bentley, with King of the Universe
- 4 Mr. Horner, with Talisman
- 5 Mr. Bentley, with Duchess of Sutherland
- 6 Mr. Mellor, with George Hardwick
- 7 Mr. Bentley, with Headly's Seedling
- 8 Mr. Mellor, with Queen of the May
- 9 Mr. Bentley, with Friar Tuck
- 10 Mr. Moorhouse, with Bessie

Class 9. *Best feathered Tulip.*—Mr. Needham, with Trip to Stockport. *Best flamed Tulip.*—Rev. F. D. Horner, with Samuel Barlow.

BREEDER TULIPS.

Class 10. *Six dissimilar Tulips, two of each class.*—First, Rev. F. D. Horner, with Sir Joseph Paxton and seedling bizarres; Rosy Morn, and Lady Grosvenor, roses; Fairy Ring and Titania, byblœmens. Second, Mr. Needham, with Sir Joseph Paxton and Goldfinder, bizarres; A. M'Gregor and Madame St. Arnaud, roses; Adonis and Glory of Stakehill, byblœmens. Third, Mr. Wood, with Wm. Wilson and Sulphur, bizarres; Industry and Mabel, roses; Martin's 117 and Mrs. Cooper, byblœmens. Fourth, Mr. Mellor, with Sulphur and Sir Joseph Paxton, bizarres; A. M'Gregor and Rose Hill, roses; Geo. Hardwick and Adonis, byblœmens. Fifth, Mr. Moorhouse, with Sir Joseph Paxton and Lord F. Cavendish, bizarres; Mrs. Barlow and Mabel, roses; Bridesmaid and Geo. Hardwick, byblœmens. Sixth, Mr. Bentley, with Lloyd's 47 and Goldfinder, bizarres; Mabel and Rose Hill, roses; Glory of Stakehill and Alice Grey, byblœmens.

Class 11. *Three Tulips, one of each class.*—First, Rev. F. D. Horner, with Sir Joseph Paxton, A. M'Gregor, and Seedling; second, Mr. Needham, with Lloyd's Seedling, Madame St. Arnaud, and Sir Joseph Paxton; third, Mr. Wood, with Wm. Wilson, Rose Hill, and Alice Grey; fourth, Mr. Moorhouse, with Sir Joseph Paxton, Mabel, and Geo. Hardwick; fifth, Mr. Mellor, with Sir Joseph Paxton, A. M'Gregor, and Talisman; sixth, Mr. Prescott, with Sir Joseph Paxton, Mrs. Collier, and Janette; seventh, Mr. Dymock, with Dr. Hardy, Mrs. Moores, and Adonis; eighth, Mr. Bentley, with Sir Joseph Paxton, Mrs. Barlow, and Talisman.

Class 12. Single Blooms.—

Bizarre Breeders.

- 1 Mr. Prescott, with W. Wilson
- 2 Mr. Prescott, with Sir J. Paxton
- 3 Mr. Mellor, with W. Wilson
- 4 Mr. Bentley, with Goldfinder
- 5 Mr. Wood, with Sulphur
- 6 Mr. Mellor, with Lord F. Cavendish
- 7 Mr. Mellor, with Richard Yates
- 8 Mr. Horner, with Seedling

Rose Breeders.

- 1 Mr. Prescott, with Mrs. Collier
- 2 Mr. Horner, with A. M'Gregor
- 3 Mr. Moorhouse, with Mrs. Barlow
- 4 Mr. Moorhouse, with Mabel
- 5 Mr. Mellor, with Mdm. St. Arnaud
- 6 Mr. Bentley, with Queen of England
- 7 Mr. Mellor, with Industry
- 8 Mr. Bentley, with Olivia

Byblœmen Breeders.

- 1 Mr. Horner, with Seedling
- 2 Mr. Horner, with Seedling
- 3 Mr. Bentley, with Ashmole's 114
- 4 Mr. Mellor, with Hepworth's Seedling
- 5 Mr. Moorhouse, with George Hardwick
- 6 Mr. Eyre, with Talisman
- 7 Mr. Moorhouse, with Bridesmaid
- 8 Mr. Moorhouse, with Ashmole's 126

Class 13. *Best Breeder in the Show.*—Rev. F. D. Horner, with Fairy Ring.—J. W. B.

BUTLEY TULIP SOCIETY.

THE seventy-third annual Show was held at Butley, near Macclesfield, on Saturday, June 2nd. There were not as many flowers exhibited as last year, owing to the unfavourable weather experienced during the last month. As at the National Show, Mr. C. W. Needham was in great form, and took the lion's share of the prizes. The flowers shown were very good in quality except the breeders, which were not up to the usual standard. The principal prize at Butley is a silver cup given for the best stand of six rectified flowers. It was won by Mr. Needham with well grown examples of Sir J. Paxton, Mabel, Talisman, flamed; William Annibal, Heroine, and Mary, feathered. Mr. J. W. Bentley was second with Sir Joseph Paxton, Annie M'Gregor, King of the Universe, flamed; William Wilson, Mrs. Atkin, and Guido, feathered. The Judges were Messrs. H. and J. Housley of Stockport, and the following is a list of the awards:—

Feathered Bizarres.

- 1 Mr. Needham, with Attraction
- 2 Mr. Bentley, with Charles H. Hopwood
- 3 Mr. Jones, with Sir Joseph Paxton
- 4 Mr. Needham, with Typo
- 5 Mr. Needham, with Attraction
- 6 Mr. Dymock, with Sulphur
- 7 Mr. Needham, with William Wilson
- 8 Mr. Needham, with James M'Intosh
- 9 Mr. Needham, with Luke Ashmole

Feathered Roses.

- 1 Mr. Needham, with Heroine
- 2 Mr. Needham, with Mrs. Atkin
- 3 Mr. Needham, with Annie M'Gregor
- 4 Mr. Needham, with Comte de Vergennes
- 5 Mr. Needham, with Lizzie
- 6 Mr. Bentley, with Alice
- 7 Mr. Needham, with Heroine
- 8 Mr. Needham, with Julia Farnese
- 9 Mr. Needham, with Mrs. Collier

Flamed Byblæmens.

- 1 Mr. Bentley, with Talisman
- 2 Mr. Bentley, with King of the Universe
- 3 Mr. Bentley, with Talisman
- 4 Mr. Needham, with Adonis
- 5 Mr. Bentley, with Duchess of Sutherland
- 6 Mr. Bentley, with Chancellor
- 7 Mr. Dymock, with Lord Denman
- 8 Mr. Hague, with Queen of the May
- 9 Mr. Dymock, with Beauty of Litchurch

Three breeder Tulips, one of each class.—First, Mr. Hague, with John Wilkinson, Mrs. Barlow, and Alice Grey. Second, Mr. Bentley, with Goldfinder, Mabel, and Glory of Stakehill. Third, Mr. Needham, with Sir Joseph Paxton, Mabel, and Beauty of Litchurch.

Bizarre Breeders.

- 1 Mr. Needham, with Sir Joseph Paxton
- 2 Mr. Bentley, with Goldfinder
- 3 Mr. Jones, with Sulphur
- 4 Mr. Hague, with Wm. Wilson
- 5 Mr. Bentley, with Lloyd's 47

Rose Breeders.

- 1 Mr. Needham, with Annie M'Gregor
- 2 Mr. Bentley, with Mabel
- 3 Mr. Needham, with Rose Hill
- 4 Mr. Bentley, with Mrs. Barlow
- 5 Mr. Hague, with Lady Grosvenor

Mr. Needham won the prizes for premier feather and flame with Trip to Stockport and Samuel Barlow, and Mr. Hague the premier breeder with John Wilkinson.—J. W. B.

THE YOUNG GARDENERS' DOMAIN.

CLEAN versus DIRTY POTS.

I HAVE no desire to either advocate lazy ways or dirty habits, but during my short career I have found that *clean pots*, however preferable, are not absolutely essential to the well-being or healthy growth of a plant. I well remember my old copybook phrase, Cleanliness is next to godliness, and admit of its being applicable to both plants and people. Mr. Buchanan will doubtless be able to defend his own assertions, not requiring any assistance from me; but I notice that (page 340) he says, "Begin early to practise your brain in scheming and planning the easiest, the quickest, and the cheapest way to do a given piece of work." I am of the opinion that the quickest and cheapest way is not in fetching a man from a more important job, on a busy spring morning, to wash 6-inch pots to shift Tomato plants into. I have noticed, too, the ease with which some plants turn out of their pots with roots intact, and the difficulty in knocking out others, and attribute the latter, in many cases, to the plants having been placed in pots that were not properly dry, after washing. When the pots had been rubbed round inside with an old dry brush before crocking rarely have I found any difficulty in turning out the plants.

A worthy man under whom I formerly served used often to give me an injunction—viz., to regard the plants under my charge as little children, and minister to their requirements accordingly. Place before a hungry but dirty boy some soap and a penny bun, and I fancy all will agree that it is the latter he will operate upon first. I am afraid when I have complete charge I shall choose the lesser evil, and not let my plants go hungry because I have not the requisite number of clean pots to give them additional food in. In conclusion, I may say that I have had a taste of pot-washing this last week, but it is not while writhing under the back-ache that I am penning these, my first few lines, to the "Domain."—A YOUNG BOY, *Cheshire*.

CAMPANULA PYRAMIDALIS.

THIS is one of the most useful and stately plants for the decoration of the conservatory with which I am acquainted. To bring it to perfection I recommend it to be grown in the following manner:—Sow the seeds thinly in well-drained pans filled with light sandy soil the first week in June, placing the pans in gentle heat. When the seedlings are large enough place them singly in thumb pots, using similar compost, and arrange them on a shelf near the glass in a cool house. Admit abundance of air, and shade during bright sunshine. When the soil has become permeated with roots repot, and keep the plants somewhat close in a cold frame for about ten days, after which the lights should be used only as a protection against heavy rains.

By September the plants will require 6-inch pots, these being suitable in which to winter them. Assign them a position in the reserve garden, plunging the pots, just cover the rims with coal ashes as a protection against severe frosts. In February of the following year give the plants a final shift into 10-inch pots, using a rough compost, consisting of rich turfy loam with a little Mushroom bed refuse added, and enough sand to keep the whole porous. Care must be exercised in potting, in order to avoid breaking the lower leaves, which are very brittle. At this stage a few of the plants may be housed at once, but the major portion will be best removed to a cold frame for about three weeks, admitting abundance of air, and finally placing the plants in lines in an open position out of doors on a thick bed of ashes. Stake the plants with neat bamboos, fixing them to a stout wire attached to uprights at each end of the row.

Apply water carefully at first, and syringe during bright afternoons to keep down red spider. Weak liquid manure, after the pots are filled with roots, will assist in building up strong spikes of bloom. As the flower buds appear remove the plants to a cool house to develop their flowers before placing them in the conservatory or mansion. By adopting cool treatment from the first, strong healthy specimens will be insured, that will produce from three to six spikes of flowers, each 4 to 6 feet in height. These will be a mass of bloom from July to September, provided the old flowers be removed as soon as they have passed their best. From their pyramidal habit of growth (as the name implies) these plants form useful objects for dotting among groups of flowering plants or Palms, and in such a position their beauty, especially that of the white form, *C. p. alba*, is seen to advantage.—T. P.

THE CULTURE OF MUSHROOMS.

CONSIDERING the number of gardens in which Mushrooms are poorly grown, no one need be surprised that many young craftsmen have hazy ideas on their culture. To those of the "Young Gardeners' Domain" who have not the opportunity of gaining good practical knowledge on the subject I hope the following notes will be of service.

There is no production of the garden which is more highly valued in most establishments than Mushrooms. To obtain them all the year round artificial heat must be employed from the beginning of October until the end of April, but through the summer they can be successfully grown outside or in a cool shed. Material for making the beds is of much less importance than the structure. The ideal Mushroom house, in my opinion, is one having a central pathway, and a bed on each side about 4 feet wide and 3 feet 6 inches deep. About 4 feet above a second can be built of the same dimensions as the lower one; in this way two rows of beds on each side of the pathway can be arranged. The house must be heated with hot-water pipes suitably arranged, and the temperature must be about 60°, never much less, or more.

The next item to be considered is the material and the proper way to form a bed. I have heard of men growing Mushrooms in a mixture of turf, leaves, and horse droppings, with excellent results. But where droppings can be obtained there is nothing to excel them for producing large crops. They should be moderately dry before being used, but not too dry, or a large proportion of their valuable matter will be lost. Experience will recognise when they are in proper condition, and also the time to make them into a bed. Firmness is one condition of success both inside and out. If the material is put together loosely the heat will soon escape, and Mushrooms will not be produced long after it has left the bed. All the material should be placed in the bed at once and rammed and trodden down firmly. In a short time the temperature will rise perhaps to 100° or more, but the spawn should not be inserted until it falls to about 80°.

It is most important that good spawn be selected, as if it is poor no amount of after skill will produce first-class Mushrooms. The ordinary sized bricks should be broken into about a dozen pieces, and these placed singly, 3 inches deep, about 9 inches apart all over the bed. The holes made in doing this will let out some heat, thus bringing the temperature to the proper level; but they must not be allowed to remain open or heat will rapidly escape, and the spawn will not run if the bed is at all cold. As soon as the bed is spawned it should be cased with

loam, but if this cannot be spared any ordinary soil will do. It should be put on about 3 inches thick, and beaten down firmly with a spade till it has a smooth surface. If it is too dry for levelling it must be watered. To maintain a constant supply a bed should be made about every month. Worms and slugs occasionally attack Mushrooms, but a sprinkling of salt will effectually stop them, and otherwise act beneficially.

Outside beds ought to be made in the same way as inside ones in the matter of material and firmness. Form ridges about 2 feet 6 inches through, and 6 inches less in height, after they have sunk. They should be covered with long litter or straw, which will help to keep the heat and moisture in, and will protect the bed.

Many recipes are known for the making of spawn, but I will only quote one. Horse droppings one part, cow manure one-fourth, and loam one-twentieth. These are incorporated with stable drainings until the mixture is the thickness of mortar. When it is fairly set it is cut into squares, and about an inch of good spawn is dibbled in them. This is the white substance that can be found in hotbeds or cattle sheds, and is easily distinguished by its true Mushroom smell. The bricks are afterwards placed on a hotbed of about 60°, and the spawn soon fills them. When this has been done they are removed into a dark place, and allowed to become perfectly dry until required for use.—S. S.



FRUIT FORCING.

Cucumbers.—When the night temperature can be prevented from falling below 65°, artificial heat may be dispensed with, making the most of sun heat by early closing. Look over the plants twice a week, well thinning the old growths, and supply liquid manure occasionally. Syringe only in the afternoon, but damp in the morning and through the day, so as to maintain ample moisture in the house. With the ends of the structures north and south a slight shade becomes necessary, or from 4 to 5 in the afternoon when there is danger of the foliage being scorched. Pits and frames should be closed at 3 to 4 P.M., assisting plants in bearing with liquid manure. Remove bad leaves, cut out exhausted and too close growths, and stop young shoots one or two joints beyond the fruit. Where plants are enfeebled by bearing top-dress with lumpy loam, and layer some of the younger growths at a joint, from which roots will be emitted and strengthen the succeeding growths. Night coverings will not now be necessary, but it is important to attend to the ventilation early.

Vines.—*In Pots for Early Forcing.*—Stop the canes when from 6 to 8 feet long, pinching the laterals and sub-laterals at one joint as produced. This applies to cut-backs and to those from eyes started early and shifted into the fruiting pots. The smaller canes intended for planting need not be given more than 6 or 7-inch pots, as good fibrous roots are of more importance than luxuriant canes.

Vines Cleared of their Crops.—Syringe occasionally to keep the foliage clean, afford water to render the soil moist, mulch the border with short, spent material, and thus prevent the surface cracking, whilst encouraging the roots to work at the upper part of the border. Allow a moderate extension of the laterals, and admit air freely above 60°. There is no fear of the wood not ripening, and the difficulty is to prevent its doing so prematurely.

Houses of Ripe Grapes.—Black Hamburgs, and also Buckland Sweetwater, will be the better for a slight shade from powerful sun. A double thickness of herring nets will mostly be sufficient shade, and a good spread of foliage will assist the Grapes in keeping their colour. Moderate ventilation at all times, and free in bright weather, will prevent injury from moisture. Keep the laterals fairly under, but a little extension will assist in the retention of the principal leaves, and upon their continuance in health depends the maturity of the buds for the next year's crop.

Grapes Ripening.—When the Grapes begin changing colour admit a little air constantly, with sufficient heat in the pipes to maintain a night temperature of 65° and 70° to 75° by day, with 80° to 85° or 90° through the day from sun heat. Avoid an arid atmosphere, damping occasionally and do not allow the border to become dry. Vines ripening heavy crops will be assisted in perfecting them and storing nutriment for the future by an application of tepid liquid manure, or a top-dressing of fertiliser washed in. A light mulching of dry spent material will assist the Vines by securing uniform moisture. It is a stagnant atmosphere that does most of the mischief in Grapes spotting, and oftentimes in cracking.

Thinning Late Grapes.—There must be no delay in thinning the berries and bunches. Thin well to secure large and highly finished berries, leaving those of the large berried varieties, such as Gros Colman, about an inch apart, the oval-berried varieties not requiring so much room as the round ones. All should be so thinned that they will have space for swelling fully without wedging, and yet be so close that when dished they will retain their form. A pound of Grapes per foot run of rod is usually as many as Vines ordinarily finish well; therefore reduce the bunches so as to give about that weight, and if error is made let it be on the safe side, as Vines that are overcropped never finish their fruit well, and the Grapes are inferior in quality and keeping properties.

Regulating the Growths.—All foliage that can have full exposure to light should be allowed, but when the space is nearly covered with leaves keep the growths closely pinched. The foliage should be rather thinner in the case of white Grapes than in black—this more particularly applies to Muscats, which require high elaboration of the sap to insure their assuming a rich golden amber colour. Avoid large reductions of foliage at a time, it only tends to cause shanking through the check given to the roots. Keep the growths tied down from the glass, and so prevent scorching. Vines extending must be allowed to make as much lateral growth as practicable, but never permit them to interfere with the principal leaves. The laterals from the bearing shoots having been stopped at the first joint they may be allowed to ramble afterwards, subject to their not interfering with the main leaves.

Watering.—Inside borders must be properly supplied with water, following, in the case of Vines carrying a full crop and in vigorous but not luxuriant health, with liquid manure, or a top-dressing of fertiliser washed in and mulched with a little sweetened material to keep the surface moist and attract the roots. Outside borders may only need a light mulch, as the recent rains have made them moist enough, but if dry a proper supply of liquid manure should be given whenever necessary.

Temperature and Ventilation.—All late Grapes thrive in a high temperature with abundant nourishment at the roots and genial moisture in the atmosphere. Maintain a night temperature of 65°, and 70° to 75° by day in dull weather. Admit air early, and allow a little at the top of the house constantly, increasing the ventilation with the temperature, advancing to 85° or 90° from sun heat, at which keep through the day, reducing with the declining sun. Close at 85°, damping the paths then, and again before nightfall. It is well to close for a short time and then admit a little air, so as to prevent a vitiated atmosphere and allow of pent-up moisture escaping. Avoid cold draughts or sudden depressions of temperature, as they cause rust and favour the spread of mildew.



HOW TO OBTAIN A SURPLUS.

THE majority of bee-keepers are anxious to obtain a surplus from their bees in some form or the other, but how to arrive at the desired end is the difficulty we all have to contend with. Many things have to be taken into consideration, the chief in this country being the weather. Were it possible to have the bright sunshine and cloudless skies, such as are experienced in some other countries, for several days or, it may be, weeks in succession, when required during the honey flow, we believe there would be no difficulty in obtaining as large a surplus, and honey of much better quality, than could be obtained elsewhere.

It is, however, with uncertainties that we have to contend, and whether the season is likely to be good or bad we must make careful preparation beforehand. If the chief honey harvest is obtained from White Clover, by knowing the date it is usually in bloom, we shall find the last week in June and the first fortnight in July may be depended on when it is found at its best for honey production. In the South it will probably be a week or more earlier, and in the North a few days later.

The secret of obtaining a surplus is to have all stocks intended for honey production crowded with bees, and it is for bee-keepers individually to make up their minds how this shall be done. Those who have numerous stocks will always find some of their colonies increase at a much greater rate than others, although all may have had the same treatment. This fact is observed more in the spring than at any other season. If such is the case, it shows how useless it is to expect the same weight of honey from all the colonies in an apiary. It is therefore advisable for the bee-keeper to make a given number of stocks extra strong by adding bees, which will mix readily at this season if the middle of a fine day be chosen. But as this system has been mentioned on several occasions in these pages, it is unnecessary to enter into details now. We are convinced that a greater surplus can be obtained from a given number of hives, if worked on these lines, than from any other.

There are various ways of doing it. Some bee-keepers prefer two queens in a hive, and allow the bees from the two stocks to unite in the super. It amounts to the same thing. Two or more queens will supply the workers, and it is certainly an advantage to have an extra supply of workers on hand when required, as unity is strength when a surplus is required.

WORKING FOR COMB HONEY.

In some districts honey in the comb finds a ready sale, and bee-keepers are often anxious to obtain a few superior samples. Already we have seen some nicely filled much earlier than usual from the fruit blossoms and the Sycamore, but the bees were in a favoured spot. It is an advantage when using the ordinary 1 lb. section to have a few fully drawn-out combs placed in the centre of the crate, as

the bees will often work more readily in these at the commencement of the season than they will on foundation. In either case it is necessary to cover the crate up warm, as warmth is essential to the proper sealing over of the combs.

If the weather is warm and likely to remain so, a second crate of sections may be placed underneath the other when it is three parts sealed over; this will prevent the bees swarming, and they will continue storing a surplus whilst sealing over the combs in those already filled.—AN ENGLISH BEE-KEEPER.



TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Stocks for Producing Flowers for Cutting in the Spring (A. G. G.).—The Brompton, the Cocardeau or Giant Cape, and the East Lothian are all suitable for the purpose, but are injured, if not killed, during severe winters unless grown in specially favourable positions. For growing in pots, and wintered in frames, East Lothians are very fine. If you only wish to try one kind, let it be the Brompton. If you want particular colours they must be ordered, the scarlet and white being the most in demand.

Caterpillar on Euonymus (R. H. R.).—The caterpillar with the gay colouring and looping gait is that of the magpie moth (*Abraxas grossulariata*), and that on the under side of the leaf, and with light threads attaching it to the surface, is another of the same species about to pass into the chrysalis state, which is done in a light cocoon. The moth emerges about the middle of summer. The caterpillar usually feeds on the leafage of Currant and Gooseberry bushes, also rosaceous plants, not on Euonymus, and the leaves sent do not appear eaten, the caterpillars having no doubt selected the shrub for purposes of pupation. The caterpillars are easily destroyed by hand-picking, as they are seldom very numerous.

Richardia æthiopica (Wakopa).—The above is the correct name of the plant that is so extensively, and often profitably, grown, by the sale of its large white spathes. It is a native of Africa, and known also as *Calla africana*—popularly, as the Arum Lily, though it is not a Lily, but an Aroid. Since writing your letter you may have seen the excellent article on the culture of "Arum Lilies," by Mr. Brotherston, on page 482. Thousands of plants are planted in rich soil in the open ground in May or June to be taken up and planted under glass in the autumn, though some growers prefer flowering them in pots. After flowering, the plants are removed and a crop of Tomatoes or Cucumbers obtained in the house before it is wanted for the "Arums" in the autumn. The plants are not bulbous, but herbaceous perennials.

Pears Infested with Maggots (C. C. E.).—The Pears are attacked by the Pear midge larvæ. The subject was fully treated in the *Journal of Horticulture* of June 3rd, 1897, page 487, and illustrations given of the pest—the Pear gall gnat (*Diplosis pyrivora*). The only thing to be done now is to remove all the swollen fruits and burn them. This must be done at once, or the pests will leave the fruit and become pupa in the soil. A dressing of kainit in the autumn, 4 ozs. per square yard, has a good effect, but the midges come from neglected orchards, so only continued action can completely eradicate the pest. Instead of committing suicide, if the wash advised kills your trees, we would suggest the alternative of your giving the adviser of it a horsewhipping. We trust the fresh lease of literary life you have taken will prove long and satisfactory, and when the pen needs exercise let it have a run; the course is as safe as ever.

Compost for Eucharis (Meath).—The soil should consist of two parts rich turfy loam to one of leaf mould or thoroughly decayed manure, with about a sixth of broken charcoal, to keep it open, incorporating all well together. Liquid manure may be given with advantage when the plants have got well hold of the soil, and the pots crowded with roots, especially after the flower scapes appear.

Daphne indica rubra (Idem).—This plant requires a greenhouse temperature, and cannot be grown in too much light after established from the cuttings or grafts. When making growth a temperature of about 55° is suitable, but the plants may be subsequently grown in a frame. They require gradually but well hardening afterwards, and keeping quite cool during the autumn and winter, in order to thoroughly ripen the wood, as on that depends the success in flowering. Avoid overpotting. A suitable compost consists of equal parts peat and loam, or the latter alone when of a turfy nature. Give water very carefully, especially in winter. Good drainage is essential to the health of the plants.

Overgrown Stephanotis (S. B.).—When the plant has filled the allotted space it is advisable to thin out the longest and barest of the branches in such manner as to keep the plant well furnished with young growths from base to extremity, having the flowering parts so far asunder that light and air can act upon them. This requires a little forethought, and then it is easy to secure a succession of flowering growths by cutting back the long and bare wood, or thinning as required. The plant will give much finer flowers than by reserving a large quantity of wood, which is useless, because much of it will be bare of flowering parts. The plant should be kept rather dry a few days before and after any extensive pruning, but not so dry as to injure it.

Plants and Insect (J. C. S.).—*Brunfelsia* (*Franciscea*) *Hopeana* or *confertiflora* is a stove plant and very floriferous, succeeding in a cool stove or warm greenhouse, if kept rather dry in winter, but not causing the leaves to fall. *Dasyliion longifolium* is an ornamental greenhouse evergreen, admirable for conservatory decoration, also for sub-tropical gardening. *Magnolia Soulangeana* is probably a natural hybrid between *M. conspicua* and *M. obovata*, white with purple tint, hardly so sweet as those referred to, yet a fine form of *M. conspicua*. The lively and beautiful insect is the Box sucker (*Psylla buxi*), which injures the young shoots and leaves, causing them to have a crumpled and stunted appearance. It seldom, however, does much harm. The bushes may be syringed with any of the advertised insecticides, following the instructions.

Pear Leaves Blackened (J. M.).—The leaves and young wood are badly attacked by the scab fungus (*Fusicladium dendriticum*) in the early leaf and shoot form, and may probably have been accelerated by the recent wet, followed by the current cold, dull weather. It is rather common this season on various rosaceous plants, especially Thorns and Pears, and is known as *Actinonema Cratægi*. We should cut away as much of the growth as can be spared, also any young fruits affected, as they would only crack if left, then spray the tree with a solution of sulphide of potassium (liver of sulphur) $\frac{1}{2}$ oz. to a gallon of water. If you have not a spraying apparatus apply by means of a fine-rose syringe, repeating in about ten days, and again at a similar interval. In the autumn it would be advisable to lift the tree, or at least to root-prune to some extent, and add fresh soil with calcareous matter, such as old mortar rubbish.

Roses for Pots (P. N.).—We have raised many Roses from cuttings, choosing firm, healthy portions of matured wood of the current season with dormant buds. The stems which have flowered in the summer, taken with a heel or otherwise, cut about 8 inches long, inserted 6 or 7 inches deep in sandy soil in the open ground early in October, have given us a good proportion of plants, as also have firm short-jointed portions of shoots which have not flowered. If the leaves which rest on the soil when the cuttings are inserted can be kept fresh by shading and sprinkling as may be needed rooting is the more sure, though we have raised hundreds of plants by inserting the cuttings a little later, or as soon as the leaves can be shaken off. The method was to stretch a line, chop out a trench of the proper depth, throw some sand in it, press down the cuttings slantingly about 6 inches apart, place back the soil and tread it against them, with the tops just above the level of the soil. All varieties do not emit roots with equal freedom. Well selected cuttings of the common Briar, made and inserted in the same way when the leaves are falling, give a good percentage of plants which remain in position, and are suitable for budding with any varieties of Tea, H.P., or other Roses during the second summer after insertion. When they are ready the soil is cleared from around them for the insertion of one bud in each stem—the part previously within the surface of the ground. The stocks are cleared of basal growths for facilitating the operation, but are not cut down till the following spring, when the bud extends and, in the case of many varieties, flowers the same season. These "maidens," if taken up and either potted or planted in the autumn and cut back in the spring, make good flowering plants. The pots containing the Roses are plunged to their rims in ashes in summer, and if they remain out through the winter the rims are well covered also, or there would be many breakages. When a stock is once obtained it is easy to maintain or increase it by raising the desired number of plants yearly. You must remember that all the buds must be cut clean out the Briar stems, except a couple at the top, and which are just above ground when the cuttings are inserted; but the whole of the buds may be left intact when the cuttings are taken from varieties of Roses that you may desire to increase by that method. We are glad that after many years of reading it you find the *Journal* as acceptable as ever, and trust it may be so for many years to come.

Peach Leaves Falling (*D. H.*).—The specimens arrived as we are preparing for press, and cannot possibly be examined this week. They shall have attention.

Browned Leaves on Cordon Apple Trees (*J. B. W.*).—The leaves are rusted and browned by the larvæ of the small ermine moth (*Hyponomeuta padellus*), which live in small webs, shifting their quarters and enlarging the "nests" as circumstances of food requirements and increase of growth occasion. The simplest method of riddance is to take the "nest" boldly in the hand and thoroughly squeeze the mass of caterpillars. This can very easily be carried out on cordon trees; or if you do not like the procedure, thoroughly syringe with petroleum emulsion solution, using such force as to break up the web-nest. As there appear other pests at work you may follow with a spraying of Paris green mixture, 1 oz. of paste to 20 gallons of water, which should be so applied as to simply coat the foliage with a thin film, keeping the liquid well agitated during its use.

Pear Shoots Eaten (*R. G.*).—The softsoap and quassia preparation has not killed the yellow thrips. There were plenty of them on the specimen, and they succumbed in "no time" to a solution of aniline, one part in twenty parts water, this being, perhaps, the best thripsicide. The thrips are the yellow species (*Thrips cerealium*), usually found on corn and grasses, but not uncommon on broad-leaved plants, especially the Lesser Bind-weed (*Convolvulus arvensis*). They, however, have not eaten the leaves, this damage being caused by some caterpillar, which we did not find. The creature usually folds the growing points of the shoots together, or rather the leaves of the respective shoots attacked, sometimes eating out the "hearts," and not unfrequently the flowering parts. The most common delinquent is the caterpillar of the lesser Apple-leaf roller moth (*Teras minuta*), but there are several species, and all injurious in nurseries and fruit plantations. The eggs are laid in the spring on the unfolding buds or leaves, the larvæ soon hatching to devour the tender foliage or floral parts, some of which they roll into a protective covering. They continue feeding for about a month, when they pupate within the folded leaves, or seek dry quarters, and a week or so later emerge as small reddish grey moths. There are two or three broods in a season of some species. The common sparrow (*Passer domesticus*) is very fond of the caterpillars, so also are chaffinches and the warblers for feeding their young. On low trees the best cure is hand-picking, and on tall spraying early with Paris green paste, 1 oz. to 20 gallons of water. For the thrips use a solution of petroleum emulsion, following the instructions, or any of the advertised insecticides, these having a deterring effect on the moths. Tobacco juice diluted to a safe strength has a destructive effect on thrips, and kills or prevents most insects from attacking the growths of plants or trees.

Odontoglossum Leaves Spotted (*H. W.*).—The leaves have a very singular appearance when held to the light, the spots having brown centres and streaks in the yellow part traversed by some micro-organism, which has abstracted the contents of the tissues immediately beneath the cuticle, and given rise to the spotted appearance. The spots are not larger than pin-heads in some cases, not so large when first noticed, and become confluent, thus spotting the leaves in an irregular manner. At first the spots have whitish centres, but as they increase in size become brown with a somewhat broad yellowish surrounding ring. The only outgrowth or "fruit" found was that of an *Heterosporium*, closely related to *H. minutulum* (*Cooke and Massee*). It is very destructive to the leaves, and may probably be arrested by sponging the plants occasionally with a solution of sulphide of potassium (liver of sulphur), $\frac{1}{8}$ oz. to a quart of water, for the young leaves, and $\frac{1}{4}$ oz. to that amount of water for those fully developed. The strength last named would not probably hurt the young leaves, but it is advisable to err, if at all, on the safe side. The white marks on the leaves are caused by a minute species of red spider (*Tetranychus orcidis*) which has been charged with causing the spots, but its action more resembles that of thrips. It also succumbs to the sponging with sulphide of potassium solution. We may also mention that sulphate of copper (bluestone) solution has been used with good effect, 1 oz. to $1\frac{1}{2}$ gallon of water, applying carefully with a sponge to both surfaces of the leaves. We should have the plants repotted, and every means adopted to invigorate them. *Odontoglossums* require a moderately moist atmosphere, and, after a bright day, are much invigorated by a gentle dewing by means of a syringe. They are also much healthier and more floriferous when grown in a house where they can obtain all the light possible, short of the fierce sunlight of our summers.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Farnham*).—*Ilex aquifolium angustifolium*. (*J. L. S.*).—1, *Adiantum concinnum*; 2, *Zephyranthes carinata*; 3, *Billbergia nutans*. (*F. M. O.*).—1, *Calampelis* (*Eccremocarpus*) *scaber*. (*W. Y.*).—1, *Woodwardia radicans*; 2, *Lastrea Filix-mas*; 3, *Todea*

superba; 4, *Pteris serrulata*; 5, *Asparagus plumosus nanus*; 6, *Adiantum Pacotti*. (*B. P.*).—1, *Cypripedium barbatum*; 2, *Oncidium sphacelatum*. (*H. C.*).—1, *Acer platanoides*; 2, *Choisya ternata*. (*M. H. S.*).—Possibly *Crataegus coccinea*. Cannot be certain about this without seeing fruit or flowers.

COVENT GARDEN MARKET.—JUNE 15TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	0 0	to 0 0	Lemons, case ...	11 0	to 14 0
Cobs ...	0 0	0 0	St. Michael's Pines, each	2 6	5 0
Filberts, 100 lbs. ...	0 0	0 0	Strawberries ...	2 0	5 0
Grapes, lb. ...	1 6	3 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bunchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsify, bundle ...	1 0	0 0
Coleworts, doz. bunchs. ...	2 0	4 0	Scorzonera, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, lb. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Fuchsia ...	6 0	to 9 0
Aspidistra, doz. ...	18 0	36 0	Heliotrope, doz. ...	6 0	9 0
Aspidistra, specimen ...	5 0	10 6	Hydrangea, doz. ...	8 0	10 0
Calceolaria, doz. ...	6 0	9 0	Lilium Harrisii, doz. ...	12 0	18 0
Coleus, doz. ...	4 0	6 0	Lobelia, doz. ...	4 0	6 0
Dracæna, var., doz. ...	12 0	30 0	Lycopodiums, doz. ...	3 0	4 0
Dracæna viridis, doz. ...	9 0	18 0	Marguerite Daisy, doz. ...	6 0	9 0
Erica Cavendishi ...	18 0	30 0	Mignonette, doz. ...	4 0	6 0
„ various, doz. ...	12 0	24 0	Musk, doz. ...	2 0	6 0
Euonymus, var., doz. ...	6 0	18 0	Myrtles, doz. ...	6 0	9 0
Evergreens, var., doz. ...	4 0	18 0	Palms, in var., each ...	1 0	15 0
Ferns, var., doz. ...	4 0	18 0	„ specimens ...	21 0	63 0
„ small, 100 ...	4 0	8 0	Pelargoniums, scarlet, doz. ...	4 0	6 0
Ficus elastica, each ...	1 0	7 0	„ „ ...	9 0	15 0
Foliage plants, var., each	1 0	5 0	Rhodanthe, doz. ...	5 0	6 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, doz. bunchs. ...	2 0	to 4 0	Mignonette, doz. bunchs. ...	2 0	to 4 0
Arum Lilies, 12 blooms ...	3 0	4 0	Myosotis, doz. bunchs. ...	1 0	2 0
Asparagus, Fern, bunch ...	2 0	4 0	Narciss, doz. bunchs. ...	1 0	3 0
Azalea, doz. sprays ...	0 6	0 9	Orchids, var., doz. blooms	1 6	9 0
Bluebells, doz. bunchs. ...	1 0	2 0	Pelargoniums, doz. bunchs. ...	4 0	6 0
Bouvardias, bunch ...	0 6	0 9	Polyanthus, doz. bunchs. ...	1 0	1 6
Carnations, 12 blooms ...	1 0	3 0	Roses (indoor), doz. ...	0 6	1 6
Eucharis, doz. ...	3 0	4 0	„ Red, doz. ...	1 0	3 0
Gardenias, doz. ...	1 0	3 0	„ Tea, white, doz. ...	1 0	2 0
Geranium, scarlet, doz. bunchs. ...	4 0	6 0	„ Yellow, doz. (Perles)	1 0	2 0
Iris, doz. bunchs. ...	4 0	6 0	„ Safrano (English) doz.	1 0	2 0
Lilac (French), bunch ...	3 6	4 0	„ Pink, doz. ...	3 0	5 0
Lilium longiflorum, 12 blms	3 0	4 0	„ Moss, per bunch ...	0 9	1 0
Lily of the Valley, 12 sprays	0 6	1 0	Smilax, bunch ...	2 0	3 0
Maidenhair Fern, doz. bunchs. ...	4 0	8 0	Tulips, doz. bunchs. ...	2 0	4 0
Marguerites, doz. bunchs.	1 6	2 6	Violets, Parme (French), bunch ...	2 6	3 6
			Wallflowers, doz. bunchs. ...	1 0	3 0



FIRST QUALITY.

YES, indeed! we pretend this is what we strive for, and without which we shall never be satisfied; but really, if we come to look at the subject seriously, how very few of us ever attain to "first quality" in what we do or make or produce. How soon we tire! one failure, perhaps, we look for, a second depresses, and a third overwhelms us, and we are glad to fall back into the old ruts, the old customs, and say, What was good for our fathers is enough for us. Mind, this is not true of us all, nor had it need be; but if we each ask ourselves the question, "Am I not too often content with only

achieving a measure of success instead of pressing on to perfection?" how many could honestly affirm that they were never transgressors?

The road to perfection is rough and stony, hard to travel, and wearisome to the feet; but the fact remains that there is a road, and the diligent surmount the difficulties and reap the reward. We have often spoken of the value of milk as an essential article of diet; but, like all other valuable products, it is most open to adulteration, and diluted adulteration is a punishable offence, and as such can be dealt with by the law.

But for all that, it is quite possible, and more than probable, that a milk customer (unless he always has milk from the same cow) might find on analysis that the feeding qualities of his pint varied with every day in the week—some days he would get full value for his 2d., other days very much less—and this not because the purveyor was a cheat, but simply because the milk from different cows will be found to vary in value most materially. Milk does not "flow" in this land as plentifully as it did in Canaan of old, and the dairy farmer has much anxious study to compile a dietary form for his cows which will enable him to meet the demands of his customers.

A cow in full milk is a very "tickle" animal; so many little things will throw her out of gear—a chill, a change of food, or a temporary ailment. As to a chill in this climate, how is such a check to be avoided? and also, how difficult it is all the year round to provide a sufficiency of succulent food that will not taint the milk! Who can guard against midsummer days cold as Christmas, or burning droughts that destroy everything green? It is indeed a science, the proper feeding of a dairy herd—the feeding that will make them produce the utmost extent of milk.

Then comes the quality of the milk. We all know the difference between the thin blueish gallons of a sturdy old Dutch vendor, and the rich thick pints produced by a little Jersey, and we know which we like best. It is quite possible to get good rich milk from almost any cow that walks, provided she is fed on fat-producing food. It is merely reducing the feeding art to a system. You cannot subtract 3 from 0; you must treat the cow as a machine, and by feeding her well and suitably she will take care that you see your outlay again.

On those farms where only few cows are kept, just to supply the house with butter and milk, it is advisable that quality rather than quantity be aimed at. It is so possible to feed milk cows that they are much readier for the butcher than for the milk pail—*i.e.*, the good rich food turns into body fat rather than into butter fat.

Some interesting experiments were conducted in Germany last years—experiments made with a view to testing the qualities various foods produced in the milk. Cows fed on hay alone produced richer (butter fat) milk than those which, in addition to the hay, received rations of carbohydrates, such as starch. The starchy matter probably went to make body fat. When, in addition to hay, oily food was given there was an immediate rise in the quantity of butter fat found in the milk. Sesame oil, linseed oil, and tallow stearine were made into emulsions the increase was as follows:—Linseed, 5.24 per cent. of fat; tallow stearine, 4.24 to 5.5 per cent.

The oily matter must be given in an easily digested form, or the end desired is defeated. We all know how difficult it is for some human stomachs to assimilate oily matter, and how soon the digestive organs are put out of tune, and it is just the same with the cow. An impaired digestion means loss of appetite, and loss of appetite means loss of milk-producing power. Palm and Cocoa-nut cake fat are also most useful as butter formers, and, of course, good linseed cakes—that is, cake out of which not all the oil has been pressed. Our oil pressers have become so clever that with modern machinery they leave us now a very dry cake. Then, again, it is possible to use too much cake, and the result would be a soft oily butter. Good nitrogenous and oily foods are necessary for the production of butter fat in milk.

Subjoined are some rations given to cows at the Midland Dairy Institute, with the view of testing the influence of food on the

production of butter fat in the milk. There were five cows in each lot:—

Lot A.—Roots, 50 lbs.; chaff, 10 lbs.; hay, 6 lbs.; bran, 2½ lbs.; beanmeal, 3 lbs.; oat and wheatmeal, 2 lbs., with 2½ linseed cake with 6.83 per cent. oil.

Lot B.—Same as A, with 4½ lbs. linseed cake of 16.83 per cent. oil.

Lot C.—Same as A, with 4½ lbs. linseed of 6.83 per cent.

Lot B produced most butter, but of low quality—*i.e.*, soft and oily, while that of Lot C was the best, the quantity being but very little below that of Lot B—0.89 as against 0.91. The cows of Lot B were in much better condition at the end of the tests than those of the other two lots.

WORK ON THE HOME FARM.

Warmth, real warmth at last! We have had three or four days of electricity with very heavy showers, and some of the land is in a state of puddle, but the temperature is now most satisfactory both night and day, and what we most fear is a period of burning sun heat, for the young Barley and Oats have become so accustomed to a liberal supply of liquid, and their roots are consequently so near the surface, that too sudden a change might be for the worse rather than the better.

Wheats are growing fast, and there will be a heavy crop of long straw; this is now assured, but it is too soon to forecast the yield of grain. Barley and Oats are improving, but, so far, under average, greatly so, in fact; forcing, stove-like weather, is required for these crops.

We have been hard at work hoeing, but the weather has not been favourable, and many weeds have again got a foothold; this means more expense, as the extra hoeing hands have to be kept on longer, but as regards Mangold and Potatoes much can be done with the skerry. Potatoes have grown so fast since our last that we have had to hurry up with the top-dressings, and earthing ploughs are busy at work; this crop is very backward, but is distinctly promising. Small tubers, the size of horse beans, have been observed by the men. Sheep are doing very well, lambs particularly so. So far there has been no trouble with the fly, but with greater warmth the maggots are sure to put in an appearance. Tobacco powder we have found to be the best preventive of a second attack by these pests.

Milk cows have a good pasture, and are yielding good supplies of milk. Butter at 8d. per lb., however, leaves no margin for profit, and we are rearing as many calves as possible, but good well-bred ones are not easy to meet with.

Hay crops are very good, and another week will see haymakers at work. Clovers were grazed rather late before being laid in for hay, but the wet season has been very favourable to them, and they are promising, though they will not be ready to cut much before July.

ROOK PIE.—Adverting to our note on page 492, last week, our agricultural correspondent writes:—"All we can say is that the man referred must have had a bad digestion or an indifferent cook. A well made pie will consist of rooks' breasts alone, which have been previously steeped twenty-four hours in milk and water. The rooks should be skinned, not plucked. Please note our address, and we will gladly take all surplus rooks—for ourselves, not for our dog." The case alluded to was not one of "digestion," but of dog *versus* man's judgment in eating rook. The man thought the dog knew the better, and followed his example in refusing to taste the young "craws." We still wonder if the farmer's dog is of the same opinion as his master, who seems ready to "take all surplus rooks." The italics are ours, but it is a "large order." The hints for making a rook pie are all the same useful.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.: Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1898. June.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture.			
		Dry.	Wet.			Max.	Min.	In Sun	On Grass		
		inchs	deg.	deg.		deg.	deg.	deg.	deg.	inchs	
Sunday	5	29.856	62.2	56.0	Calm.	53.8	75.4	47.8	113.8	45.3	—
Monday	6	29.818	68.9	61.8	S.	54.9	69.4	49.3	102.0	45.9	0.128
Tuesday	7	30.033	61.7	54.6	N.W.	55.2	74.4	52.2	119.6	48.8	—
Wednesday ..	8	30.079	65.0	57.1	Calm.	57.0	69.8	50.4	93.2	47.2	0.020
Thursday ..	9	30.118	62.2	56.1	N.	57.0	71.9	56.3	119.6	53.9	0.075
Friday	10	30.065	56.2	55.0	N.	57.6	63.9	54.1	103.1	54.5	0.052
Saturday	11	30.140	63.8	58.0	N.	56.6	75.4	49.9	118.3	46.4	—
		30.016	62.9	56.9		56.0	71.5	51.4	109.9	48.9	0.275

REMARKS.

- 5th.—Warmer; occasional spots of rain in morning, and bright sun in afternoon.
 6th.—Sunny early; rain from 9.30 to 11 A.M., and showery till noon; gleams of sun in afternoon, and fine night.
 7th.—Bright sun almost throughout, but occasional cloud at midday.
 8th.—Overcast day, with a shower at 1 P.M.
 9th.—Overcast morning, with spots of rain; fair afternoon.
 10th.—Rainy in the small hours, and almost continuous rain from 7 A.M. to 1 P.M.; fair afternoon and sunny after 6 P.M.
 11th.—Almost cloudless throughout.
 Temperature rather above the average, rainfall still below it.—G. J. SYMONS.

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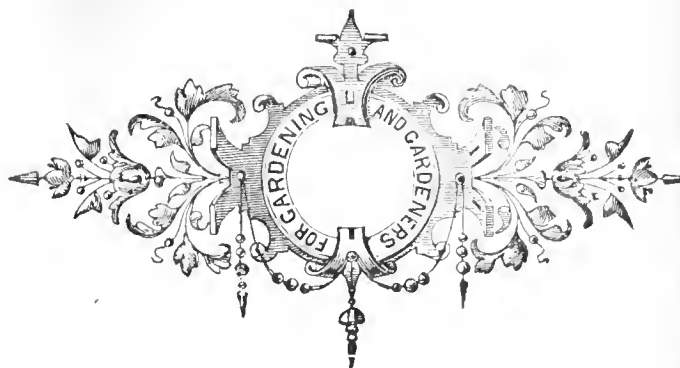
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Journal of Horticulture.

THURSDAY, JUNE 23, 1898.

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IN ST. BRIGID'S GARDEN.

IN St. Brigid's garden St. Brigid is the gardener,
and employs her own means to the end of
that perennial enjoyment which has nought to do
in this case with broad acres or glass houses, and
to whom the world is indebted for that glorious
strain of garden Anemones. After leaving Dublin
by the coast railway, which has done so much for
travellers by it to show off one of the most
picturesque parts of picturesque Ireland, and robbed
many a marine residence of freedom to the fore-
shore, the run is but a short one to the quiet little
station of Ballybrack, close to which the imposing
rocky heights of Killiney tower up in bold relief.
Here the ordeal has to be faced—a few minutes'
uphill walking to find a lady, disappointed because
a distinguished amateur hardy plantsman was, from
no fault of his own, not at Ballybrack at the same
time as myself.

St. Brigid was "at home" expecting us, but it
was not quite the St. Brigid we had conjured up;
in fact she should have been, to use the lady's
own words, "an old woman in a poke bonnet;"
though it is less easy to understand how some
of her correspondents have erred in addressing
her as S. Brigid, Esq. The "little garden" proves
to be a *multum in parvo*, and as for its size,
the way in which St. Brigid tripped daintily from
bed to bush, and from bush to border, expatiating
upon beauty that had been, or glories to come,
with existent charms, leaves one delightfully in
doubt.

The handsome foliage of *Vitis Cœnnetiae* drapes
the porch under which two bushes of the Narrow-
leaved Myrtle flourish, not necessarily protected in
this Riviera-like climate, for others are to be seen
freely exposed at all seasons. There is just a
suspicion of orthodoxy present in some neatly
trimmed grass plots, beyond which imposing masses
of the large starry *Olearia* are in their glory; and
surely no greenhouse ever sheltered a finer specimen
of *Cytisus elegans* than is to be seen in the back-
ground. *C. Everestianus* is spoken highly of by
this enthusiastic lady gardener, but it has not yet
found its way into the "little garden."

Near the aforesaid trimly kept lawn Nature asserts its wild ways in an unkempt growth of Solomon's Seal, now in all its beauty of arching, glossy foliage, and pendant bells, beneath which again the wild Hyacinth flourishes at its own sweet will. Near at hand the bold, bronzy foliage of *Rogersia podophylla* is very assertive to the eye, and a leaf measured by the saintly umbrella first, and my tape afterwards, made a record of 36 inches across.

The "little garden" lies high and dry, and many of the lesser things are sheltered by the greater—hidden in fact; but those who hide know where to find, and the umbrella now acts as a divining rod to disclose a perfect plant of *Ramondia pyrenaica*, while *Primulas*, notably *rosea*, in the most luxuriant foliage, and a thousand plants have a foothold in or about rock-studded banks. One bank in particular is a galaxy of creeping, clinging, rambling plant life, and upon the crests of these mounds and banks bushes of the Gum Cistus are bristling with buds. *Aralias*, *Bamboos*, and others form a kind of maze, through which one wanders oblivious of time or space, as the enthusiastic guide leads the way.

How lovingly the Lady of the Anemones tells the story of some favourite plant, disclosing the hidden grace and beauty of its charms! The bond of sympathy betwixt her and them seems complete when some tangly plant clutches the cloak of some shimmering material, donned as a passing shower scudded by.

The kitchen garden, or what may have been so once, for the kitchen part is conspicuous by its absence, is entered by an archway of *Clematis montana grandiflora*. Here are breadths of countless *Narcissi* and borders of *Hellebores*. The unique single white *Pæony* is in strong force, with such plants on the walls as *Clinodendron Hookeri*, now gorgeously arrayed with long-stalked, pendant, crimson blooms. It is rare I suspect; who can tell us something about it? *Solanum jasmioides* grows rampantly along the top of the wall.

It is here, perhaps, in this portion of the "little garden" that St. Brigid's labours of love are most in evidence. Here are the Anemones bearing her name and fame, but not quite so happy as they were, I am told, at Howth on the opposite shores of "sweet Dublin bay," where the old strain of garden Anemone under her skilful hands yielded its handsome progeny. However, the good work is now going on with the Daffodils and with the *Hellebores*, the now declining foliage of the former measuring, in the case of some varieties, 40 inches in length, whilst of the latter a bed of baby seedlings, it is hoped, will speak for themselves later on.

Each season of the year has its own story to tell in the "little garden," the aim of its mistress being to have flowers all the year round, and this without a suspicion of glass or greenhouse; hence, as I said, the enjoyment is perennial. Noticeable among things noticed, and too numerous to mention, were Homer's white Rose, *Rubus deliciosus*, large bushes of *Salvia fulgens* (a speaking testimony of the climate), *Clianthus puniceus*, and a bush of the helmet *Calceolaria*, smothered in its quaintly pretty blossoms. A *Smilax* in particular is pointed to with pride, in spite of its nomenclature of *S. asparagoides retrofractus arboreus*.

Interesting, too, is *Drimys Winteri*, not merely as affording the "Winter Bark" of commerce, used for the same purposes as cinnamon, but because the plant was first brought to England from the Straits of Magellan in 1579 by Captain Winter, who went out with Sir Francis Drake in his voyage round the world.

Yet with all its interest, grace, and charms, comes a tale of woe from the "little garden." The ubiquitous slug is no respecter of persons or of plants. "Could I suggest a remedy?" "Oh! birds—blackbirds and thrushes." "But they can't eat them all." A thought crosses one's mind that the slugs might have been banished with the snakes and toads instead of fattening and battenning on these tender plants, then things would be nearly perfect. Nearly, not quite, perhaps, for over the tiniest of cups in the daintiest of drawing-rooms comes the faint echo of complaint in another direction, and this from one of the fraternity, for So-and-so grumbles he "can't grow his vegetables in

the shadow of the house," hence the reason, perhaps, there is no recollection of seeing any.

No pen of mine could do justice to the unique situation of St. Brigid's Home, from the front of which one looks over a valley to the mountains of Wicklow close at hand. Seascape on the left with Bray Head in the background, and immediately opposite sunshine chases the shadows over Lugnaquilla, the Sugarloaf, as the return is made to Ballybrack Station, with a bouquet culled from St. Brigid's garden.—K., Dublin.

ROUTINE IN MELON CULTURE.

WHEN the crop is over and the plants are healthy and not affected with red spider, they may be reserved for a second crop, in which case growth should have been retained and encouraged in the late stages of the first crop, and a good set of fruit secured on these, whilst the structures were kept drier for the fruit ripening. The old growths in this case should be cut clean away, but not all at once, as that would give a check, reserving the best of the growth, and any cuts that bleed should be dressed with quicklime.

Remove a little of the surface soil and supply some lumpy loam. Soak with tepid water, and follow at once with liquid manure. Mulch with horse droppings spread previously in a shed and turned over two or three times before using for the Melons. They are best given a little and often rather than a heavy mulching all at once. If kept moist the roots will soon spread in the loam. Thin the fruits, apportioning them to the vigour of the plants—half a dozen is a full crop, and overcropping fatal to quality.

REPLANTING IN HOUSES, PITS, AND FRAMES.—Where the plants are not in a condition to bear second crops clear them out at once, removing the soil. If the heat be supplied by fermenting materials, remove a portion of it and add some fresh, mixing it with the fresher portions of the old, which will revive the bottom heat sufficiently to give the young plants a start. Cleanse the house or structure thoroughly, success greatly depending on a good start. Plant on hillocks or ridges. Rather strong loam three parts, one part horse droppings, and one part old mortar rubbish, mixed and rammed firm, will grow Melons well. When warmed through plant carefully, shade from bright sun for a few days, ventilate early in the morning, and close early with a moist atmosphere.

PLANTS SETTING THE FRUIT.—With a sturdy, short-jointed, and not crowded growth, Melons set freely at this time of year, but air should be admitted so as to keep the pollen dry, and the atmosphere genial. Insects visit the flowers, and by pollen transference effect fertilisation. In moist weather, however, Melons do not set freely in frames; in that case apply good linings, and admit air freely, ventilating a little at night so as to prevent the deposition of moisture on the blossoms, as to be effective the pollen must be dry, and the stigmas not destroyed by moisture. Keep the foliage fairly thin, for without light and air a good set of fruit need not be expected. A free use of the knife is not desirable whilst the fruit is setting. Afford water only to prevent the leaves flagging, and keep it from the foliage.

PLANTS SWELLING THEIR CROPS.—When the fruit is the size of a hen's egg, add fresh soil to ridges or hillocks after a good watering. Syringe the plants in houses at closing time, and damp well down in the mornings and evenings of hot days. Afford liquid manure copiously, always weak and tepid, or sprinkle a little fertiliser on the surface and wash it in. Supply supports to the fruit in good time, placing slates under those in pits and frames. Keep the foliage fairly thin, not allowing a large amount to be made, and afterwards have to reduce it in quantity, for that gives a severe check, and may result in gumming. Ventilate at 75°, keeping the temperature through the day at 80° to 90° with sun, and close so as to raise it to 95° or 100°, with plenty of atmospheric moisture. In dull weather a little ventilation without lowering the temperature prevents the foliage becoming soft and unable to bear sun after such periods. Admitting a little air about 6 P.M. on days when the houses have been closed early, will allow the temperature to fall gradually, and any vitiated air to escape. As the fruit approaches ripening reduce the water at the roots, but not to the extent of causing the foliage to flag, and withhold water from the fruit. A gentle warmth in the pipes or linings to frames, with a little air constantly, afford the best safeguard against cracked fruit, which is mostly caused by a moist atmosphere at night, or a dull moist period following hot weather.—PRACTITIONER.

PARIS EXHIBITION OF 1900.—We are requested to state that the Royal Commission are now prepared to circulate information respecting the exhibition. The classification and rules for exhibitors, together with forms of application for space, can be obtained by applying to the Secretary of the Royal Commission, Paris Exhibition 1900, St. Stephen's House, Westminster, S.W.

* We do not see the name in the *Index Kewensis*. Is it "*Crinodendron*" syn. *Tricuspidaria Hookeriana*—a Chilean plant?



CATTLEYA MENDELI OAKES AMES.

THE named forms of *Cattleya Mendeli* become more and more numerous, and there can be little doubt that many do not deserve any distinctive appellation. Such a charge cannot, however, be laid against C. M. Oakes Ames, for it is one of the noblest varieties that has been exhibited, and attracted extraordinary attention at the Temple Show. The flowers are above the average size, are very substantial, and of remarkably rich colour. The broad, slightly waving petals are rich rose, with a bright crimson flame at the tips; the sepals are also rich rose. The handsome lip is velvety maroon crimson, the throat being yellow with crimson veins. As will be observed in the woodcut (fig. 98, page 521), the formation of the lip is very fine. It received a first-class certificate.

RESTREPIAS.

I OFTEN wonder why these beautiful little Orchids are not more grown, for when well established no particular difficulty will be found in their culture, and the plumes have just the quaint and singular structure and delicate tinting that appeals to lovers of Orchids. In habit they most resemble the *Pleurothallis* and *Masdevallias*, the blossoms occurring on short scapes from the apex of the stems. The plants grow naturally at considerable elevation in various parts of America, extending from Mexico southwards to Brazil.

They like cool moist conditions, a little warmer, if anything, than *Masdevallias*, especially in winter, but where no intermediate house exists they get along very well together. The roots thrive best in pots or baskets of medium size, these being well drained and only a thin surfacing of compost used. Three parts of sphagnum moss to one of peat fibre is suitable as a rooting medium, and the best time to repot or rebasket is just before the growth commences. If anything close or sour is about the roots remove this before placing the new compost about them, but disturb them otherwise as little as possible. Water freely all the year round, but especially during the growing season. *R. striata* (fig. 97) is of scarcely less interest, and the illustration will convey an idea of the general floral structure of the genus.

Like *Masdevallias*, these Orchids are apt to be attacked by thrips, and if allowed to make headway these troublesome insects soon ruin the appearance of the plants. Frequent spongings are necessary to rid them of these pests, or in bad cases the vapourising fumigator must be used. About a score species are known to botanists, but not half of them are probably now in cultivation, and the two mentioned below are those most generally grown.

R. antennifera is the type species, and is so called on account of the fine narrow pointed upper sepal and petals, which are supposed to resemble the antennæ of an insect. These and the other segments are yellow closely covered with purple spots. This species was found by Humboldt very early in the present century growing on tree trunks in New Grenada, while the beautiful *R. elegans* was found in similar positions in Caracas by Dr. Kaarten. It is not so large growing as the last named, but even more beautiful, the colours being charmingly graduated on the sepals and petals, which are white at the base, streaked and spotted with purple, and extending to deep golden yellow tails. It was introduced by M. Linden.—H. R. R.

STRAWBERRY BEDS.

CENTRES of attraction these either are or soon will be in thousands of gardens, and a few notes relevant to the plants and crops will at least not be unseasonable. The plants now in bearing demand attention in assisting the fruit to ripen by affording the clusters full exposure to the beneficial influence of light, and a free circulation of air round the plants. If strong weeds have grown rankly they not only shade the fruits, but abstract food and moisture from the soil, both of which are required in large measure by the Strawberries. Neither should the fruits be densely shaded with large luxuriant leaves, the abundant rainfall having tended to increase the leaf surface recently. Some of the oldest and inferior leaves might with advantage be removed, but avoid stripping away too freely large and perfectly formed leaves. The chief benefit accruing is the freer circulation of air.

The ripening fruit must have a clean bed of material, such as straw, to rest upon. Perfectly sweet clean straw is essential when used at a late period, but litter from the stables, if applied early

enough, is usually preferred. It becomes clean and sweet on the surface by washing with rain before the fruit is ripe. Supporting the trusses of fruit with forked sticks, or laying squares of glass, slate, or tiles underneath them, may also be employed. Short grass or anything that will troublesomely adhere to the fruit ought to be avoided. Immediately the fruit is ripe protection must be afforded from birds by placing nets over the beds, arranging some temporary framework for supporting them well above the fruit, and so that they can be readily removed to gather the berries.

The best period for feeding Strawberry plants is after the fruit is set and before it begins colouring. It is then in an active state of development, and the demands on the energies of the plants great. Soluble food, such as liquid manure and soot water, may be applied,

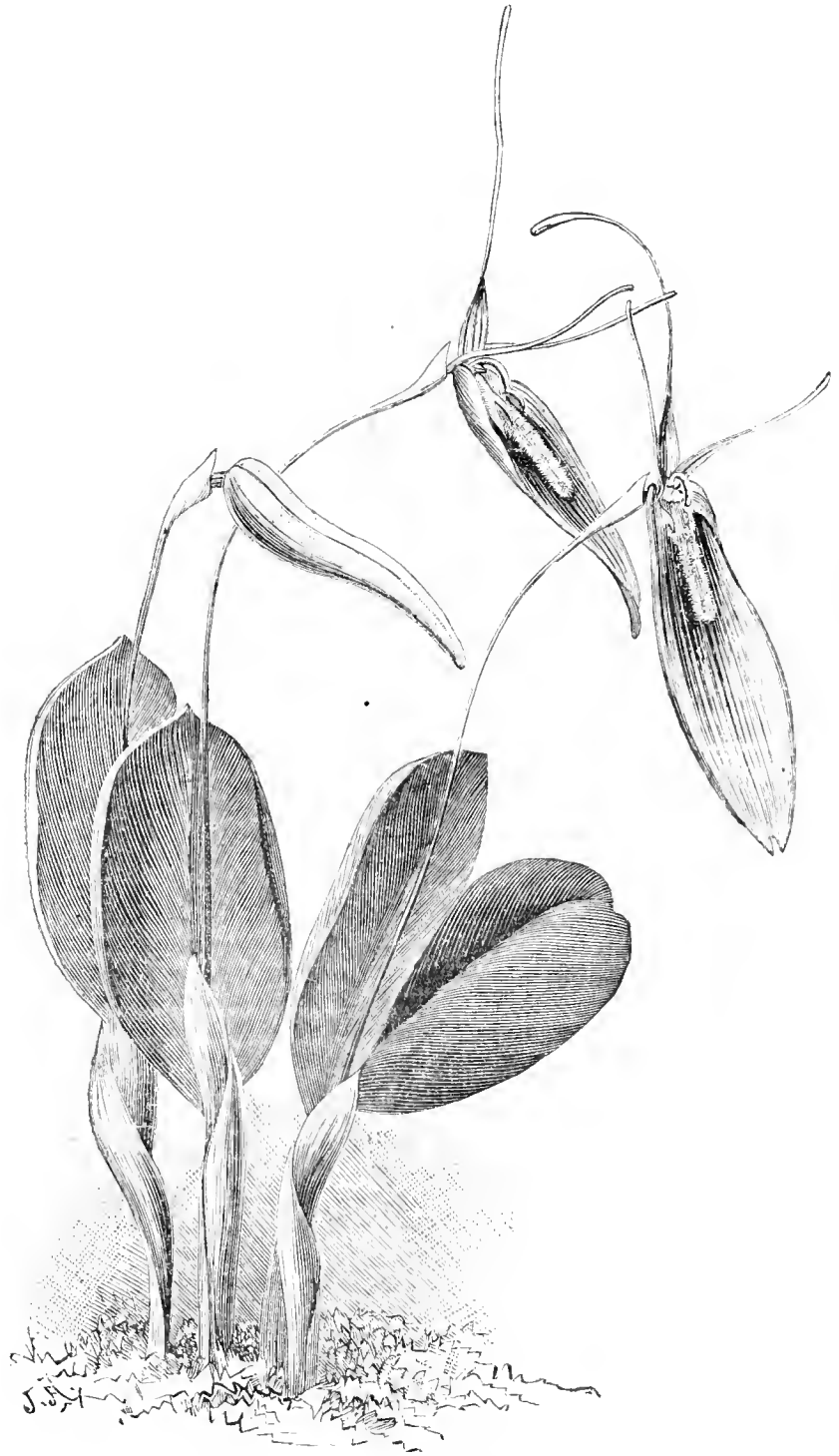


FIG. 97.—RESTREPIA STRIATA.

pouring it round the roots, where it can easily reach the masses of fibres, and be almost directly absorbed. In seasons when the soil is moist from frequent rainfalls, liquid nourishment may still be given with advantage. In very dry periods it ought to follow only upon copious applications of clear water.

LAYERING.—In addition to the fruit of the present crop we have to think about plants for the future. In order to secure well-rooted plants for establishing early, and affording fine fruits next year, the stronger of the first runners must be preserved on vigorous fruiting plants, removing the weaker at an early stage. When signs of roots are apparent on the most forward of the plantlets, these may be secured, each with a hooked peg or a stone, on the surface of small pots filled firmly with good substantial soil. Partly embed the pots in the ground, and supply water freely in dry weather. Cut off the runner wires extending beyond the pots, and when these are well occupied with roots the young plants may be detached, standing them in a shaded place for a few days, and they will soon be ready for planting.—E. D. S.

AURICULAS—ANCIENT AND MODERN.

As my earliest floral associations are connected with the Auricula, I have, of course, from time to time noticed any developments in its culture, especially in these later days, when so much attention is being given to a class of flowers which in my earlier days were hardly thought of. I mean the Alpine section, and what are now called Fancy Auriculas. Sharing, perhaps, the prejudices of the older florists, these classes have never "captured" me. The Alpines, no doubt, are very handsome, and of late years have been wonderfully improved; they are, moreover, much more easy to cultivate than the edge varieties, and increase more rapidly; they also seed very freely, so much so that one of the best Auricula growers I ever knew would not have one of them in his garden for fear of contaminating the seed of his choicer kinds.

With regard to what are called the Fancy varieties, they were evidently those which were known to the old Dutch florists, and appear in the flower paintings of many of the Dutch school. I imagine that the edge varieties are purely of English origin. The oldest list that I have seen contained only English names, and of those now in cultivation the oldest goes back to the beginning of this century. I have had a list which was compiled about 150 years ago, but it gives no indication as to what classes the flowers belonged, and not one of them appears to have survived to the present time. The jealousy with which the best varieties were watched by their owners, the care which was taken of them, treating them like spoiled children more than anything else, and the extraordinary composts in which they were directed to be grown, amuse those who in these days have adopted a more rational mode of proceeding.

That the Auricula will ever be popular, in the same sense and to the same extent in which the Rose and Carnation are popular, is, I think, very questionable; and warm and deep as is the love which the Auricula grower has for his favourites, he cannot be blind to the fact that all do not see with him. To many both the form and colour of the flower are stiff and formal, and my experience is that nine persons out of ten who come to see a collection of Auriculas will pitch upon the selfs in preference to the edged varieties, and the selfs are certainly the least highly developed of the four classes into which the Auricula is divided.

The north may certainly be regarded as more especially the home of the Auricula. It is amongst the weavers and cotton operatives of Lancashire that it had its strongest hold, and it was not until about twenty or twenty-five years ago that much attention was paid to it in the south. In the earlier part of the century it is true there were many keen and enthusiastic growers in and around London, but somehow or other they had nearly all either passed away, or abandoned the culture of the flower for something else; but the movement made to institute a southern branch of the National Auricula Society gave an impetus to the culture, while the offering of good prizes induced exhibitors to come forward; still the cultivators are comparatively few, although they have been very enthusiastic and successful.

As we are now arrived at the time in which it will be necessary without delay to repot our plants, in nothing will the alterations in culture be more manifest than in this operation. All the nastinesses of former days are discarded, and what the Auricula grower looks out for now is good strong turfy loam, such as is obtained in the Downs near Epsom and other similar localities. It is not clayey, and is full of fibrous roots, which, after it has been stacked for some time, decay, and afford admirable material for the purpose. Three parts of this, with one part of well-decayed cow manure, and one part of leaf mould, with some sharp sand, form a compost in which the plants flourish. There are some growers who will not treat all their varieties alike, but give to some more of one of the ingredients than to others; they will have their little heaps of the three kinds of soil used on their potting bench, and mix them according to what they think the plants require. I have never gone myself into such minute particulars, but have mixed all the compost I might require at once, and used it indiscriminately for all varieties.

Another point which has been more strictly insisted upon of late years is that of firm potting. It is true that some of the older florists did practise this. Amongst them was that keen and successful florist John Dickson of Acre Lane, Brixton, who was at one time the only trade cultivator in the neighbourhood of London, and who raised several varieties, which for a time maintained their position in our lists. They had, however, most of them too much body colour, and did not suit the more exact requirements of the present day. In potting them the soil should be carefully pressed down as close as is possible, and too large pots should not be used. Small pots are more desirable because the new roots sooner get to the sides, and the extension of growth is encouraged thereby. This would sound like heresy to the old Lancashire growers, whose "moogs" were 6 or 7 inches across, and proportionately deep, and therefore held a large quantity of material. After the plants have been repotted they

should be placed in a frame and kept rather close for a few days in a position in the garden facing north, so that they receive little sun during the summer months. Air should be gradually given to them, and growers are generally careful that they should not be exposed to summer rains, for the Auricula dreads wet more than cold, and much damp, especially *drip*, is fatal to the plants.

Although the new varieties which are added to our lists are few in number, especially when compared with those of other flowers, yet it is abundantly evident that those which are added put the older ones into the background. There was a time when Colonel Taylor, Page's Champion, and Lord Palmerston used to be found amongst our green edges, but I suppose Page's Champion is now represented by a very few plants, and its delicate constitution probably determines its complete extinction, and such varieties as Rev. F. D. Horner, Abbé Liszt, and Mrs. Henwood, with their better constitution and greater freedom in producing offsets, have quietly pushed the others into the background. So it is with the grey edges. Waterhouse's Conqueror, Oliver's Lovely Ann, and Smith's Bolivar have long since given way to George Lightbody (that best of all Auriculas), Richard Headly, Woodhead's George Rudd, and other flowers of equally sterling character. In white edges Reed's Acme, Woodhead's Mrs. Dodwell, and John Simonite, when it can be grown, have supplanted many of the older varieties; even Heep's Smiling Beauty, that very pretty white edge, has given way before the new comers. And so with regard to selfs. The advent of Heroine, Mrs. Potts, and Black Bess has completely changed the character of our exhibition stands, such varieties as Falkner's Hannibal, Martin's Mrs. Sturrock, and Campbell's Pizarro are now not often seen.

I have touched upon this subject because now is about the best time to increase one's stock; if put off till later it will probably be found that the varieties you wish for are not to be had; besides, it is well to get them under your own care during the summer months, and so, as I have said, good common sense, and the rejection of all quackeries, and of the pretence of superior knowledge, will recommend the flower to many who have hitherto abstained from its cultivation. The National Auricula Society stands in much need of new subscribers, and lovers of the flower who may wish to encourage it have only to send their names to Mr. T. E. Henwood, Auricula Villa, Hamilton Road, Reading, who will be happy to receive them.—D., Deal.

A BRITON IN BELGIUM.

(Concluded from page 460.)

I WAS a little staggered to hear that British Potatoes are not thought much of in Belgium, but my feelings were not so severely lacerated as to debar me from doing full justice to the small yellow Flemish Potato known as Jaune de Flandre, which is by no means a sort bursting with flouriness, but has delicious flavour. The fact is—and it is a very easy one to grasp—the British Potatoes sent to the Continent are the coarse market kidneys, not the high flavoured rounds like Sutton's Windsor Castle and Daniel's Universal, or the more delicate kidneys and pebbles, like Webber's Beauty, Duke of York, and Veitch's Syon House. The foreigners, together with some "Experimentalists" at home, are entirely unaware of the fact that we have a considerable number of sorts of splendid table quality, which are not grown in immense quantities for market, but are perfectly familiar to practical cultivators on a smaller and private scale. When the correspondent who has recently been adorning the pages of the Journal with opinions about Potatoes which he does not appear to have grown takes the trouble to acquire some knowledge of the best modern garden sorts, he will probably come to the same opinion as I have done—namely, that there are excellent eating Potatoes in as well as out of England. The Yellow Flanders is grown on an enormous scale in Belgium. Whether it can hold its own here against a large number of our best sorts, a few months will show me.

What is the best potash fertiliser? This is a question of great interest and no small importance. It has cropped up recently in the discussion on Potatoes. It will crop up again. The chance that threw me into the hands of Mr. Chas. Van Geert at Antwerp was in every respect a fortunate one, for this cultured and hospitable Belgian was able to combine the interest of a very fine tree and shrub nursery with the results of many years' experimental work in plant feeding. He has an opinion of his own about manuring, and he expresses it with a conviction far more impressive than the opinions of arm-chair theorists. The theory and practice of Mr. Van Geert is to rely upon stable manure for mechanical and nitrogenous action, but not for phosphates and potash, which must be applied as supplements. So far, perhaps, there is nothing particularly noteworthy, but when we find out the special fertilisers chosen and the manner in which the manuring is done, we learn something not without significance. The phosphatic manure used is bone powder, the potash one is the much-

abused muriate. The stable manure is spread out and the two artificials sprinkled on it, then the whole mixed together thoroughly. Sometimes the manure is applied in autumn, sometimes in winter, sometimes in spring, according as the quarters are cleared. Winter is preferable, but not always practicable in a nursery, or for the matter of that in a garden either.

What has particularly struck the Belgian nurseryman in connection with muriate (there called chlorure) of potash, is the fruitful habit it engenders. You may get more exuberance of growth with very heavy dressings of farmyard stuff or repeated supplies of nitrates, but you cannot get so much fruit. He instanced the fruiting of Conifers, such as *Abies concolor*, which has been much more abundant since the muriate was used than it ever was before. There is something practical here, surely. Remember that what is said is not the story of a trial in three flower pots of thumb size, with an observer armed with a powerful microscope at each pot, but it is the record of practical work on many acres of ground over a series of years. Therein lies its value. I recently ventured to say a word in favour of muriate of potash. At the time I wrote I did not even know Mr. Chas. Van Geert. Hence his spontaneous and emphatic testimony to the value of a much-maligned fertiliser came as a pleasant surprise.

Calmpthout, where the Van Geert nurseries lie, is a much-scattered village, about eight miles in extent, fifteen to twenty miles from Antwerp. It was a relief to find the nursery gate at the station part of the radius, my bicycle being at home. Calmpthout alluringly displays two inns at opposite corners on one side of the line, and the nursery entrance at the other. To a bicyclist there might be a moment of temptation; to a horticulturist there is none. He sees a line of Copper Beeches, an avenue of Conifers in scores of species, and is at once at home. The Copper Beeches are handsome pyramids, 12 to 15 feet high, and perfectly symmetrical. Some of them go to Great Britain, but we have not too many yet, nor have we of a numerous array of other beautiful shrubs, trees, and Conifers, many of which are either not known or very little grown by us.

There is an army of Acers, prominent amongst them being *campestre albo-punctatum*, *platanoides Reitenbachii*, *p. Schwedleri*, *Pseudo-platanus Leopoldi*, *P.-p. Prinz Handjery*, *P.-p. Woorlei*, and *virginianum aureum*, all beautiful forms. It would be too severe a tax on the memory to enumerate every noteworthy deciduous tree and shrub, but those who see them will not forget *Aesculus Briatti*, *Alnus glutinosa imperialis*, *Aralia Maximoviczi*, *Betula alba atro-purpurea* and *urticifolia*, *Caragana pendula*, *Castanea americana rubra*, the beautiful and hardy *Catalpa syringæfolia aurea*, *Cerasus Avium fl.-pl.*, and *C. sinensis pendula flore roseo*, *Cornus sanguinea aurea marginata*, *Corylus Avellana aurea*, *Cratægus Carrieri*, single white, with very large red fruits, *Fagus sylvatica purpurea* and *s. p. pendula*, *Fraxinus excelsior aucubæfolia*, *Liriodendron Tulipifera fastigiatum*, *Malus floribunda*, *Parrotia persica*, *Prunus Padus aucubæfolia* and *P. Pissardi*, *Quercus americana rubra* and *Q. pedunculata fastigiata*, *Robinia Pseudo-Acacia semperflorens*, *Sambucus canadensis filicifolia*, *Sorbus Aria lutescens*, *Tilia Beaumonti pendula*, and *Alnus americana pendula*.

Having regained breath the visitor will consign to memory a few shrubs proper, such as *Amygdalopsis Lindleyi*, *Ceanothus Gloire de Versailles*, *Hypericum Moserianum*, *Ribes pumilum aureum*, *Spiræa (Exochorda) grandiflora*, *Staphylea colchica*; several Lilacs, such as *Syringa vulgaris alba grandiflora Marie Legrave* and *Souvenir de L. Späth*, also *Viburnum plicatum*. Then he will gird himself for the Conifers, and in some reserve corner of his capacious brain he will stow away *Abies concolor*, *Nordmanniana*, *Veitchii*, *Alcockiana*, *Menziesii*, and *Hookeriana*; *Cupressus Lawsoniana Alumii*, *aurea, erecta, glauca*, and *intertexta*; *Juniperus tamariscifolia* and *virginiana aurea elegantissima*, *Larix Kæmpferi* and *leptolepis*; *Podocarpus Korayana*; *Retinospora filifera*, *pisifera aurea* and *plumosa aurea*; *Taxus baccata hibernica* and *aurea marginata*; *Thuja Lobbi albo-maculata*, *T. occidentalis Frœbeli*, *globosa*, *Hoveyi*, and *Späthii*, the latter most singularly distinct; and *Thuiopsis dolabrata*.

Being now in good training he will recall a few notable evergreens, like *Cotoneaster Hookeri*, *Phillyrea decora*, and *Skimmia obolata Veitchii*. But the number, if not the quality, being small, he will include with them a number of what the Belgians call heath soil plants, such as *Andromeda*, *Clerodendron dichotoma*, *Daphne Cneorum*, *Empetrum nigrum*, *Kalmia latifolia splendens*, *Ledums*, *Limonia trifoliata*, *Oxycoccus macrocarpus*, and *Xanthoceras sorbifolia*. He will include, too, some of the beautiful Honeysuckles the continentals grow, such as *Caprifolium bractypodum*, *C. flavum*, *C. japonicum*, and *C. sempervirens fuchsoides*; as well as *Glycine sinensis*; *Rubus fruticosus laciniatus*; huge quantities of *pontica* and *mollis* Azaleas, hardy Heaths, *Aquifoliums*, hardy Magnolias, and *Rhododendrons*.

These are but a few of the many good things at Calmpthout, but if anyone thinks he can remember more let him go and try. If he inquires, as I did, the object of the small boxes mounted on tall poles which are scattered over the nursery, he will learn that they are to harbour starlings, which are thought so valuable, on account of the grubs they destroy, as to be worth the expense of special shelters. There are 125 of these boxes, and still a few unfortunates are crowded out. In this sad experience they shared the fate of not a few horticulturists at Ghent during exhibition week. A free box at the end of a pole would have relieved some of the latter of an embarrassing task. But that is another story, and may not be told.—W. PEA.



NEW ZEALAND CHRYSANTHEMUM SHOWS.

MR. M. McDERMOTT, Honorary Secretary of the Cambridge Chrysanthemum Society, informs us that the show held at the end of April was larger than ever, and competition keener, more exhibitors taking part and the finances good. He further observes that "Mum" matters are booming, and much greater things are expected in the future.

The "Waikato Argus," in referring to the show, says the blooms were, on the whole, above the usual standard, and in some cases they were far in advance of it. We doubt if there has ever been such a stand of six Japanese exhibited at Cambridge in former years as those with which Mr. Wells took the first prize. With the exception of one bloom, *Rose Wynne*, they were all perfection. Amongst the new blooms of note that caught our attention were the following, exhibited by Mr. Wells:—*Modesta*, a brilliant deep yellow, probably about the best yellow Jap in existence; *White Swan*, a pure white of the hirsute section, large enough for a show bloom, and in every respect the superior of *Mrs. Alpheus Hardy*; *Marshall Oyama*, a pure white Japanese incurved, a splendid keeper; *Mons. Chenon de Lèche*, salmon buff; *C. H. Payne*, large amaranth, with bronze reverse; and *Australie*, a large Japanese incurved crimson lake, with silver reverse. In Mr. Buckland's stand we noticed *Emily Silsbury*, a large and handsome white; *J. H. Upton*, a very handsome full yellow, an Australian seedling of great merit; *Nyanza*, a large bloom of deep crimson colour; *Edith Tabor*, a rich clear yellow Jap; *Mons. J. Allernand*, large bloom, quilled after the style of *L. B. Bird*. Mr. McDermott had new blooms; *Stanley*, a good Jap, apricot bronze; *Glory of Pacific*, a light pink Jap; *Mrs. E. G. Whittle*, white, veined pink; *Olive Oclea*, Jap incurved, rich buff, shaded bronze; *Lewis Severs*, yellow and rosy purple, large Jap incurved. Of the true incurved section the new ones we noticed were *Mrs. R. C. Kingston*, pale pink; *Major Bonaffon*, rich golden yellow; *Major W. A. Day*, bright rose (a Christchurch seedling); *Mr. J. Kearns*, pure white, and *Bonnie Dundee*, bronze yellow.

The show was opened by the Mayor, who paid a great compliment to the President, Mr. Wells, for his successful efforts for promoting an extension of Chrysanthemum culture in the colony. Is he a connection of the "Earlwood Wells," who introduces antipodean Chrysanthemums? Shows have also been held at Essendon, Oakleigh, and Brighton, "down under."

MISS NELLIE POCKETT.

Mr. Thos. Pockett, a successful Australian raiser of Chrysanthemums, writes: "Miss Nellie Pockett has taken the champion position at three shows held in Victoria, and is now a general favourite. Early buds give immense blooms of great depth and pearly whiteness. It is easier to grow than *Madame Carnot*, of which it has become a dangerous rival." It is distributed with others by Mr. Wells of Earlwood. Mr. Pockett also refers with approval to a new incurved variety, *Tooronga*, for which he has obtained a first class certificate; a very dwarf grower, with rather more colour than *Globe d'Or*. We have in hand interesting notes from Mr. Pockett on the raising of seedling Chrysanthemums.

HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY.

WE have received the schedule of this continuously prosperous Society. The prizes are good as usual, and it is particularly encouraging to observe the silver challenge and cups offered by amateurs—the 25-guinea vase, by William Wheatley, Esq.; silver cups, by the Mayor (J. Crook, Esq.) and Sheriff (Henry Whittick, Esq.). A. S. Ayre, Esq., provides a challenge plate, value 10 guineas, in the ladies' decorative class; and the tradesmen of Hull a piece of challenge plate for blooms grown by amateurs. The Society's chief difficulty appears to be in obtaining a building large enough—large as the space is in the Artillery Barracks—for the accommodation of visitors. Last year a bold experiment was made in doubling the price for admission during the evening of the second day of the show. While it is gratifying to know that no pecuniary loss resulted, it is all the same a pity that space cannot be found for thousands more of the inhabitants of Hull to enjoy the fine and variedly attractive exhibitions.

KINGSTON CHRYSANTHEMUM SOCIETY.

WILL you please permit me to mention that in response to my recent reference to the financial position of this Society, Mr. W. Wells of Earlswood has kindly sent me towards the fund the sum of 20s. Mr. Wells does not beat about the bush in doing so, or assume any airs of special generosity. He says, in a business-like matter of fact way, "I recognise the great value to the trade of Chrysanthemum exhibitions, and should feel it to be a grave misfortune that an old and eminent society like that at Kingston should go under from lack of proper support." That is good sense. Besides the trade, there are in the kingdom very many private growers of Chrysanthemums who have largely benefited by the Kingston Shows. I shall be delighted to be the recipient of any of their practical sympathy, *a la* Wells, also of promises from anyone of really beautiful honorary exhibits, especially of a decorative nature.

No doubt all shows suffer more or less through stereotyping. There is such a tendency, because it is so easy to go on reproducing the classes without variation every year. One of the great charms of the Shrewsbury Show is the constant introduction of varied and model classes. The National Chrysanthemum Society has also benefited in the same way. Mr. Wells suggests the arrangement at Kingston of an honorary or badge class for trade novelties in Chrysanthemums, such as twelve varieties in pairs, there being no such class, so far as he knows, in existence. I should like it to be a class for treble blooms, in twelve varieties, set up in vases, varieties to have been put into commerce during the present year, or not yet in commerce.—ALEX. DEAN.

P.S.—Since writing the foregoing I have received another 20s. from an "Old Judge," who describes the Kingston shows as historical, and in past years did enormous service in widening the interest in Chrysanthemums in this country. The group classes originated at Kingston, and it was the first society to give generous prizes for Japanese blooms.—A. D.



WEATHER IN LONDON.—Summer seems to have come at last. Gardens are gay with hardy flowers, and haymaking is in progress in the surrounding counties.

— LITTLE REMINDERS.—During the press of work at the busy season certain small matters are apt to be overlooked; but, if small, they may be important. The success of certain processes depends on their being carried out in good time. It is so with the items in routine to be noticed. Let the work be done at once and benefit will be certain; defer it for a month or more and little good will accrue. Here follows my little trio:—

— RASPBERRIES.—Where the suckers that are to form the canes for future fruiting are thickly placed, good will be effected if the weaker and less promising are removed, retaining sufficient of the more promising without overcrowding, and keep the spaces between the rows clear of weeds.

— GOOSEBERRIES.—Single, double, and multiple cordons on walls and fences require their summer growths shortening. This operation may now be commenced, reducing all the foreright shoots to two pairs of leaves, allowing the leading shoot on each cordon branch to extend unchecked.

— RED AND WHITE CURRANTS.—The summer pruning of these I find of great value. They require identical treatment. Whether grown as cordons or bushes in the open the side shoots must be freely shortened back, leaving two pairs of leaves. Summer reduction of growth is highly beneficial. It frequently clears the trees of severe attacks of aphids, which infest the points of shoots, and allows a freer circulation of air around the lower leaves as well as the fruit clusters.—A WORKER.

— INTERNATIONAL KIDNEY POTATO.—This once famous variety is now to be seen in every grocers' and fruiterers' window, grown evidently at Malta or in the Channel Islands. Very few persons, perhaps, recognise it, but that is the variety which can be purchased cheaply in a young state. International has had the merit of being the best abused Potato ever put into commerce. It is odd that it should now be so universally grown and consumed as it is. Such are the vagaries of destiny. The Canary Islands Potatoes, which are smaller and earlier, the skins being quite hard set when they reach us, are evidently of Snowflake and Snowdrop, or closely like these well known varieties. I have planted greened tubers with other varieties to see what they really are, and though later than those from home-saved seed, are now pushing freely through the ground.—A. D.

— ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting will be held on Tuesday, June 28th, in the Drill Hall, James Street, Westminster, 1-5 P.M. The Rose Show, which was to have been held on this date, is now postponed until July 12th, and all intending exhibitors are desired note this change. At three o'clock a lecture will be given by the Rev. Prof. G. Henslow, V.M.H., on "Some of the Plants Exhibited."

— GARDENING APPOINTMENTS.—Mr. J. Snell, for five years foreman with Mr. H. J. Clayton, Grimston Park, Tadcaster, has been appointed head gardener to J. Hawthorn Kitson, Esq., Elmet Hall, Leeds. He succeeds Mr. T. Bonsall, who died very suddenly on Tuesday, 7th inst., when in Leeds on business. Mr. J. Creed, late foreman at Middleton Park, Oxon, has succeeded Mr. Rogers as gardener to J. D. Sanders, Esq., North Sandsfield, Gainsborough, Lincolnshire. Mr. W. Wingfield, late foreman at Hindlip Gardens, Worcester, has been appointed gardener to Sir Henry Delves Broughton, Bart., Doddington Park, Nantwich.

— THE NEWCASTLE-UPON-TYNE FLOWER SHOW.—As already announced, this show will be held in conjunction with the Northumberland Agricultural Show in the Recreation Ground on Wednesday, Thursday, and Friday, 13th, 14th, and 15th July. We are officially informed that this will be the largest show ever held in the North of England. A deputation from the Council of the Royal Horticultural Society will travel from London to visit the show and make awards. Several prominent nurserymen from different parts of England have made application for space. The whole show promises to be a great success.

— HORTICULTURAL CLUB.—The last monthly dinner and conversazione for the season took place on Tuesday, June 14th. As usual at this time the attendance was not as numerous as it generally is. The Chairman of the Club, Sir J. D. T. Llewelyn, Bart., M.P., occupied the chair, and a very interesting lecture was given by Mr. C. T. Dreury, V.M.H., on "Fern Variation in Nature and Culture." The lecture was illustrated by some remarkably beautiful illustrations of Nature-printed Ferns, by the late Col. Jones; it gave rise to an animated discussion, and a cordial vote of thanks was accorded to the lecturer. The annual excursion of the Club was fixed for July 19th, of which members will receive full particulars in due course.

— MAGGOTS ON FRUIT TREES.—Your correspondent, on page 481, seems to have suffered the same as myself with these disastrous enemies. During the last two years I have planted at least 200 young Apple trees, and throughout the month of May I was at my wit's end to know how to rid them of the hundreds of these maggots. Having so much work on hand, I was only able to spare a man two days a week hand-picking them. Seeing that this would not keep them down I was determined to try another plan, which I am glad to say has produced a gratifying effect. I had previously used the XL All mildew wash for green fly, red spider, thrips, and mealy bug, as well as mildew, with good results, and resolved to try it for this pest, which had become very disastrous. What they are I do not know, but this preparation is sudden death to all that get hold of it. As a preventive another year I intend to syringe every tree (Apples and Apricots especially) with quassia water, about the month of March, with softsoap added. I have an idea this will keep the parents off, and thus compel them to lay their eggs elsewhere. I shall anxiously await the opinion of Mr. Abbey, who seems to have made a successful study of gardeners' enemies.—G. BURROWS, *Berwick, Shrewsbury*.

— THE CUCKOO AND CATERPILLARS.—Mr. W. C. Stone inquires, on page 480, if other gardeners have had a similar experience to that he relates respecting the cuckoo. For several years I have found the bird an undoubted friend in the garden, clearing the Gooseberry plantation of the caterpillars, and very rarely do the bushes here become defoliated to any extent from their ravages. I have, however, not found the bird so bold as your correspondent; his visits being made in the early morning or evening. It is singular how early in the season the bird finds its prey. On examining the bushes for the pest, I have noted only a stray caterpillar here and there, but these disappear very quickly once the cuckoo is on the warpath. There is, as Mr. Stone points out, a great saving of labour at a time when this can ill be spared to deal with the pest by hand. The cuckoo, therefore, deserves well of the gardening fraternity, as well as the forester, in carrying on such a useful work in its search for food. There are other birds which are useful in some seasons of the year, but their value is more than counterbalanced by the harm done at other times. This cannot be said of the cuckoo, and I am glad to find there are others who can furnish an appreciative testimony for the bird, apart from its welcome notes in the spring.—W. S., *Rood Ashton*.

— FROST IN LINCOLNSHIRE.—A correspondent writing from North Lincolnshire on the 17th inst. described the weather as very cold then, and stated that a sharp frost on the previous night had "scorched" all the Potatoes in low lying situations. Kidney Beans have also been destroyed. This savours somewhat of winter five days off midsummer.

— DAMAGE DONE BY HAIL IN SEVEN MINUTES.—A year ago, it will be remembered, a seven-minutes storm of hail swept over Essex. The relief fund started for the agriculturists whose property was damaged has now been finally distributed, and the accounts published in detail. They show what terrific destruction such a visitation can inflict in so brief a space. It has taken £45,147 to relieve the worst cases, and a great deal of general damage remains uncompensated. The number of relief cases dealt with by the fund was 3188. The compensated damage alone, therefore, amounts to nearly £7000 per minute for the duration of the storm.

— TREE CARNATION COUNTESS FERRERS.—There is a fine collection of the best Carnations at St. Anne's, Clontarf, Dublin. Among these one of the finest is one raised there, and named Countess Ferrers. It is a favourite with Lady Ardilaun; and Mr. Campbell, the gardener, speaks highly in praise of the flower. Although all its qualities could not be tested—the size of its flowers, the beauty of their colour, and the fragrance they exhaled showed it to be a desirable variety. The flowers are large, well formed, and are of a beautiful blush colour, with a powerful but not oppressive Clove scent. It is also a good grower and a perpetual bloomer, besides having the property of opening well in water, and lasting for three weeks when cut.—S. A.

— PHENOLOGICAL OBSERVATIONS.—We have received a report on the phenological observations for 1897, by Mr. Edward Mawley, F.R.H.S. It is issued in the form of a manual of twenty-five pages closely packed with matter, including carefully tabulated records and diagrammatic illustrations. It bears the impress of admirable diligence and care, and will be appreciated by those who take particular interest in the weather and its influences on vegetation. Mr. Mawley sums up by saying:—"There was nothing very exceptional about the weather of the past phenological year, as regards its effects on vegetation, beyond the heavy rains in March and the three dry periods of May, July, and October. Until about the middle of May wild plants came into blossom in advance of their usual time, but throughout the rest of the flowering season they were more or less behind their mean dates in coming into bloom. Unlike the previous year the crop of wild fruits was very poor, with the exception of Blackberries and Nuts, which were unusually plentiful. There were also fair crops of roots and Potatoes. Apples, Pears, and Plums, and especially the latter, yielded badly, while the small fruits were about average." The report is taken from the "Quarterly Journal of the Royal Meteorological Society," vol. xxiv., No. 106, April, 1898.

— LILY DISEASE.—The cultivation of the Lily as an ornamental plant is rapidly extending in this country, and it must be admitted that many of them well repay the care and attention bestowed upon them. Whether grown indoors, however, or out in the open, these Lilies are liable to maladies which often perplex cultivators. A common ailment is characterised by the spotting and distortion of the leaves and flowers, and usually the stunting of the plant. In Bermuda and in the United States this disorder, known as the Bermuda Lily disease, frequently destroys from 20 to 60 per cent. of the crop. Amongst the causes of the malady are included worn-out soil, premature cutting of flowers, too early harvesting of the bulbs, carelessness in the selection of stock for propagating, bad treatment during forcing, and the ravages of insects. Investigations carried out on behalf of the United States Department of Agriculture indicate the disease to be due to a combination of these causes. Bulbs become weakened through improper selection and propagation, and this weakening is aggravated by attacks of mites and of certain fungi and bacteria. During forcing the bulbs may become weakened by over-watering, or by allowing the roots to get too dry, and then using an excess of water; in such cases the leaves become badly diseased. The blotching and distortion of the foliage are often due to the direct attack of several species of aphides and of young mites, or to the injection of water into the leaves by syringing. To check the disease proper cultivation, selection, and propagation are recommended, in order to improve the stock; suitable rotations will prevent the increase of mites and parasitic fungi. The stems should be left on the bulbs to secure proper ripening, and care should be exercised in planting, all injured bulbs being discarded. As far as practicable, injurious insects should be kept in check from the start, and continuous care should be bestowed upon watering and ventilating. Chemical fertilisers are recommended in preference to farmyard or natural manures.—("Times.")

— A POTATO BOYCOTT IN SCOTLAND.—The "North British Agriculturist" says, "The attempted boycott in the Potato trade is proving a miserable fiasco. With the few remaining stocks of old Potatoes selling up to £6 10s. per ton, and new Potatoes in keen demand at prices ranging from £30 to £45 per acre, the early Potato growers can well afford to snap their fingers at the boycotters. Several of the more extensive and better-class dealers, particularly the Messrs. Paton, are so disgusted with the boycotting business that they are threatening to clear out of it. The boycotters may not see it themselves, but they are doing their best to make themselves the laughing stock of the country."

— WISTARIA MULTIJUGA.—A good-sized bush of this rather rare species is to be seen in flower near the Pagoda at Kew. Although not so useful for general purposes as *W. chinensis* it is well worthy of cultivation. It is a Chinese species, and is chiefly remarkable for the length of its pendulous racemes. It grows freely, and may be had either as a climber or bush. The flowers are similar in colour to those of *W. chinensis*, and are borne in loose racemes 2 to 2½ feet in length. The leaves are about 15 inches long, and made up of about fifteen leaflets; each of those on the larger leaves being 3 to 4 inches long by 1½ inch wide. It can be grown quite as readily as the common *Wistaria*, and is worth remembering by those who are seeking variety among hardy climbing or sub-climbing shrubs.—D. K.

— SPRING TRENCHING AND ITS RESULTS.—I was somewhat amused on taking up the Journal to find that "Spring Trenching and its Results" still remains an unsettled question. As no doubt each gardener will continue the practice that he has found satisfactory, it seems useless prolonging the discussion. My method of treating strong soil over a period of nine or ten years has so far proved successful that I shall certainly need to be very much more "philosophised" before leaving all my ground undug through the winter, especially should there be a spell of dry weather in the autumn, as was the case in 1897. I take it that the recommendations as to digging and trenching heavy soils were not confined to any particular district, but advanced for universal adoption, hence my note of inquiry. No one respects Mr. D. Thomson's talents as a gardener more than myself, but it is possible, even for the best of men, to be too exacting on questions and methods which are open to such variable influences as weather changes in our own erratic climate.—F. DUNN.

— A WONDERFUL BUNCH OF GRAPES.—Under this heading we read in an evening paper:—"The following curious circumstance may be given credence to (says a 'Standard' telegram from Paris), as it is reported by the 'Temps,' a serious paper. There is growing in the garden of a M. Patapy of Condon, in the Gers, a bunch of Grapes, which, though but partly developed, already measures a little over 16 inches in length. It is put forth by a young shoot, grafted on an American plant, which had not till then given any fruit." The *Journal of Horticulture* is a "serious paper," and does not regard such a bunch of Grapes as either "curious" or "wonderful." It has registered as "curious" a bunch of Grapes pushing out of the thick hard stem of a Vine under a stage near hot-water pipes, and no leaves within 4 feet of it; and as "wonderful," for size a bunch which measured 27 inches in length and the same in breadth across the shoulders, with a circumference, measuring around the contour of these, of 96 inches. That is the record for "size." For "weight" (another bunch) it is 26 lbs. 4 ozs. These examples were produced in Scotland.

— ROYAL METEOROLOGICAL SOCIETY.—At the last monthly meeting of this Society at the rooms of the Royal Astronomical Society, Burlington House, Mr. F. C. Bayard, L.L.M., President, in the chair, a paper by Mr. R. C. Mossman, F.R.S.E., was read on the "Frequency of Non-Instrumental Meteorological Phenomena in London with Different Winds from 1763-1897." In previous papers the author has discussed the secular and seasonal variation of various phenomena, and he now gives the results of an analysis of the direction of the surface winds observed during the occurrence of snow, hail, gales, thunderstorms, lightning, fog, and aurora. Snow is of most frequent occurrence with north and east winds, and least common with S.W. winds. Hail showers occur most often with W., N.W., and N. winds. Gales are most frequent with W. and S. winds. The greatest number of both summer and winter thunderstorms occurs with W. winds, although the values in summer are high with E., S.E., and S. winds. The greatest number of fogs are recorded on calm days closely followed by days on which the wind blew from the east. A paper by Mr. A. L. Rotch was also read on "The Exploration of the Free Air by Means of Kites at Blue Hill Observatory, Mass., U.S.A.," and their employment was strongly advocated as of prime importance for the advancement of meteorological knowledge.



ROSE SHOW FIXTURES IN 1898.

- June 23rd (Thursday).—Bath (N.R.S.) and Ryde.
 „ 25th (Saturday).—Windsor.
 „ 28th (Tuesday).—Leeds,* Southampton,† Sutton, and Isle of Wight (Carisbrook).
 „ 29th (Wednesday).—Brockham, Canterbury, Croydon, and Richmond (Surrey).
 „ 30th (Thursday).—Gloucester, and Norwich.
 July 2nd (Saturday).—Crystal Palace (N.R.S.).
 „ 5th (Tuesday).—Diss, Harrow, and Hereford.
 „ 6th (Wednesday).—Chelmsford, Ealing, Farningham, Hanley,† Hitchin, Redhill (Reigate), and Tunbridge Wells.
 „ 7th (Thursday).—Woodbridge.
 „ 8th (Friday).—Ulverston.
 „ 9th (Saturday).—Manchester.
 „ 12th (Tuesday).—Westminster (R.H.S.), and Wolverhampton.*
 „ 13th (Wednesday).—Bedford, Ipswich, Maidstone, and Newcastle-on-Tyne.*
 „ 14th (Thursday).—Halifax (N.R.S.), Brentwood, Canterbury (Hospital Fund), Helensburgh, Reading, and Eltham (altered from June 30th).
 „ 16th (Saturday).—New Brighton.
 „ 21st (Thursday).—Sidecup.
 „ 26th (Tuesday).—Tibshelf.
 „ 28th (Thursday).—Bedale.

* Shows lasting three days. † Shows lasting two days.

—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

NATIONAL ROSE SOCIETY AND TWO-DAYS SHOWS.

AS long as my excellent friend Mr. Biron was floundering in a muddy sea of his own creation I did not think it needful to notice his letter in the *Journal* of May 5th, for I had such confidence in his agility as an old cricketer that he would not be inconvenienced by his mistake; but when he drags others down who are perhaps not gifted with such powers as he has, I think it better to set the matter right. I can see how he has been misled. My excellent co-secretary, Mr. Mawley, gives as soon as practicable each year a list of the Rose show fixtures of the coming season, whether they are those of the affiliated or non-affiliated societies, and the error into which Mr. Biron has fallen is that of supposing that all the societies in that list were affiliated. The fact is that no society which is affiliated to the National holds more than one day-shows, and the Committee have more than once lately refused to entertain the notion of holding a provincial show which ran into two days.—D., *Deal*.

ROSA SPINOSISSIMA.

IN the Rose garden near the Pagoda at Kew a large group of this Rose and its varieties may be seen in flower. The type produces white flowers about 2 inches across. Among the varieties, however (double and single), a great range of colour exists, some being white, some cream, others pink, &c. Perhaps the best and most distinct of the varieties is that known as R. s. var. *altaica*, or R. *grandiflora* as it is sometimes erroneously called. At Kew this variety grows 6 feet in height and flowers very freely and early. The flowers are white, 3 inches in diameter, and are followed by dark purple fruits. For planting in groups in a semi-wild state, or for the front of a shrubbery, a selection of the varieties of this species will be found very useful. If planted in good soil to begin with they are little trouble afterwards.—D.

COLCHESTER SHOW.—JUNE 16TH.

WHY Colchester Rose Show should be so particularly early each year I have endeavoured, without much success, to learn from the courteous and painstaking Secretary, Mr. Orpen. All I can understand is that it must be a Thursday, and that Thursdays are much in request and limited in number. My imagination fills up the rest with the supposition that on some special date there is a scramble, or game, or contest of some sort for the best Thursdays—those “on the line,” so to speak—and that Colchester has hitherto come off second best, and—to use the same metaphor—been “skied.” There was some talk of putting it off a fortnight before the day; but on the appearance of warm weather it was resolved to stick to the original date, and after that it was simply a cruel fate that the four days before the show should be so dull and cold.

The show was held in the grounds of C. E. Egerton-Green, Esq., in the town, and the schedule was, as usual, a perfect model of that of a dutiful affiliated society of the N.R.S. Good Roses, as may be supposed, were very scarce—indeed, but for Mr. Mount's contribution, and the open class of twelve Teas, and some *Maréchal Niels*, they would have been almost absent.

For thirty-six, open, Mr. Mount was easily first; some of his blooms bore traces of not having quite opened of themselves; but one was only too glad to see a good Rose at all, to be hypercritical. His best blooms were all Teas—*Maréchal Niel*, *Souvenir de S. A. Prince*, *Catherine Mermet*,

and *Rubens*. Messrs. D. Prior & Son were second, having *Cleopatra*, *Souvenir de S. A. Prince* and *Niphetos* in good form; and Mr. B. R. Cant was third, having also Teas for his best flowers.

In twelve Teas, open, the judging was at first sight not so easy, the twelve of Mr. Prince of Oxford being very much the best, but having a terribly “gone” *Maréchal Niel* prominently displayed which spoilt the whole. However, pointing soon showed that even taking off one for this bloom it was far ahead, having *Souvenir d'un Ami* (medal in the open division), *Cleopatra*, *Princess of Wales*, and *Jean Ducher*, fine, clean, and good. Messrs. Frank Cant & Co. were second with neat and regular but smaller blooms, *Cleopatra*, *Catherine Mermet*, and *Maman Cochet* being the best among them. Messrs. Paul & Son of Cheshunt were third, with a pretty specimen of Dr. Grill in the box.

The garden Roses (open) were placed in the following order:—Messrs. F. Cant & Co., B. R. Cant, and Paul & Son, but it is difficult to judge these properly if no limit (provided there are three) is placed to the number of trusses in a bunch.

In the amateur classes, Mr. R. E. West of Reigate, the only exhibitor, was placed first for eighteen. Then followed three classes with no entries. In six Roses, H. Egerton-Green, Esq., was first, showing a fine bloom of *The Bride*. He was also first for twelve Roses, the Mayor's prize, having in this box a *Maréchal Niel*, given the medal for best Tea, which was good, and an *Alfred Colomb*, and awarded a similar honour for best H.P., which was poor. Mr. R. E. West was second, and Rev. J. H. Pemberton third.

Roses were too scarce for anyone to show trebles.

In six similar Teas, all showed *Maréchal Niel*, Mrs. Arthur Cant coming first, Rev. A. C. Johnson second, and Mr. H. Egerton-Green third. In six garden Roses the last-named gentleman was first, having a beautiful bunch of *Reine Marie Henriette*, one of the blooms being apparently as good as most of the red H.P.'s shown elsewhere.

The show of herbaceous flowers was very good, Mr. Burrell of Cambridge taking first prize in the open class, followed in the order named by Messrs. Notcutt and Jacobi of Ipswich. Among amateurs Mr. H. Egerton-Green was first, followed by Hon. W. Lowther and Mr. Orpen, with an extra prize for *Lady Du Cane* of Witham. Messrs. R. Wallace & Co., Colchester, showed a fine stand of *Iris*s, not for competition.

The dinner table decorations were keenly contested, Mrs. R. Wallace taking first prize in the first class. The Judges must, I think, have been influenced here by three or four lovely blooms of the new *Calochortus* (*Purdyi*), which gained a first-class certificate a short time before from the R.H.S. This delicate flower, with its wonderful coating of white hairs, is beautiful indeed. Miss Moore was second, and Mrs. Arthur Cant third.

The next dinner table class was for wild flowers only. Miss A. F. Harwood was first, with wild Roses; Miss M. Scott second, with *Iris*s and Reeds; and Mrs. R. Wallace third, with a most interesting though perhaps not effective scheme of bog plants—*Ragged Robin* and *Cotton Rush* as the tall plants, and *Drosera* and *Stagshorn Moss* for the low ones.

In a class for a vase of wild flowers, for girls under sixteen, there were no less than twenty exhibits; and almost all of these were arranged with a taste that was quite unknown twenty years ago, before the educating power of these competitions had done its work. In another class, for like exhibitors, where a certain space had to be covered with wild flowers, the first prize was given to *Honeysuckles*, second to *Broom*, *Sorrel*, and “*Bull's-eye*” *Daisies*, and the third to a simple arrangement (which I liked best of all—it was just a piece of meadow) of “*Bull's-eyes*,” *Buttercups*, and *Grasses* alone. The first and third prizes were, I understood, won by the daughters of a labourer.

The show of *Asparagus* is always a noted feature at Colchester. In the open class for 100 heads Messrs. W. Stroulger was first, R. T. Daniell second, and F. Chapman third. The last named was last year the winner of the challenge cup for three bundles of 100 head each, presented by Mr. G. Monro of Covent Garden; but this year it was easily won by Mr. W. Godfrey of Colchester.

A gleam of sun came out in the afternoon, and a capital attendance resulted. Some of us, as usual, went off to see the grounds of Messrs. F. Cant & Co. and Mr. B. R. Cant. Roses were backward, but promising. Standards undoubtedly looked the best everywhere. Here and there orange fungus sparkled, but no mildew was present. Many large leaves had holes driven through them by the hailstorm of a short time back, but it was nothing like the memorable storm which occurred on the day of the Rose show last year. I was sorry, but not surprised after what I had heard, to find the veteran, Mr. B. R. Cant, too ill to see me, and distressed to find his good wife in a very poor state of health. On the other hand, it was pleasant to find Mr. W. Prior pretty well and cheerful in the exhibition tent once more.—W. R. RAILLEM.

NEW PUBLIC PARK AT TIPTON.—The first prize of £25 in the public competition for the best plan for laying out the New Victoria Park at Tipton has been unanimously awarded to Messrs. William Barron and Son, Elvaston Nurseries, Borrowash. Their plan shows a lake about 3 acres in extent, cricket and recreation grounds, lawn tennis grounds, bowling green, band stand, and shelters. They also furnish plans of lodge, entrance gates, ornamental fencing, &c. The park is 33 acres in extent. The second prize was awarded to Mr. John Perry, architect, Tipton. There were ten competitors.

SILICO-FLUORIDE OF AMMONIUM.

YOU were good enough to allow me to draw attention, in the *Journal of Horticulture* for the 21st October last, to the advantages of silico-fluoride of ammonium as an insecticide and fungicide. Since that date I have received letters upon the subject from all parts of the world. The substance is extensively used in the United States of America, and appears to have attracted the attention of the Department of Agriculture some time ago, so that our transatlantic friends are ahead of us in this respect, as in some others.

The following method of making the substance is simple, and all the ingredients are perfectly harmless. Obtain 1 lb. of the strongest hydro-fluosilicic acid; it ought to fume in the air, but it does not attack glass bottles or corks. Dissolve this in a quart of rain water. Then dissolve a quarter of a pound of the strongest ammonia (liquor ammoniæ fortiss.; 880 is the trade name of it) in a quart of rain water. These ingredients will cost about 1s. per lb. and 6d. per lb. respectively. Mix the two fluids, and allow the excess of silica, which is always present in the acid, to settle down. The clear liquid will be a tolerably strong solution of the silico-fluoride which must be greatly diluted with rain water before applying to plants.

Microscopic investigation has shown that it attacks and destroys eelworms, towards which it behaves like a nitrifying micro-organism. This action is very probably due to the presence in the eelworm of some alkaline base for which the silico-fluoride has a strong affinity. I gave my address in my previous communication; cheques for £50,000 can always be sent there. See page 571, December 16th, 1897.—W. M.

[No doubt they can, and perhaps our correspondent, after reading the following observations and record of experiments with silico-fluorides, may think Mr. Abbey entitled to a share in the spoil.]

SILICO-FLUORIDES—THEIR ACTION ON CROPS AND PESTS.

IN order to understand the action of any substance, the nature of its components must be chemically defined, and in strict accordance with ascertained facts. For these we are beholden to the science which treats of the nature, laws of combination and mutual actions, of the minute particles of the different sorts of matter composing the earth, and the products of the compounds they form. Chemists have shown, by their investigations, that when the different substances found in the earth are submitted to various methods of treatment, the great majority of them can be broken up into others of a less complicated nature. By submitting all the rocks, minerals, animal and vegetable substances, to appropriate processes, what are called the chemical elements are obtained. These are expressed by symbols, each corresponding to the initial letter of its Latin name, or where several elements have the same initial, a small letter is attached to it for the sake of distinction. Thus C is the symbol of carbon, and Ca that of calcium. These symbols are always understood to represent, not an indefinite quantity, but an atom of each element. The symbols

of compounds are formed by the juxtaposition of those of their elements. Thus—HCl expresses the fact that this compound contains single atoms of its constituents, hydrochloric acid being a compound of one part of hydrogen (H, 1.00) and 35.37 of chlorine (Cl, 35.37). When more than one atom of an element exists in any compound this is indicated by a coefficient placed after its symbol. Thus H_2O = water is a compound of two atoms of hydrogen and one of oxygen.

I give the foregoing, as the charge is sometimes made of the terms being of no use to practical cultivators without an explanation of their meaning, and also for the purpose of inculcating the desirableness to gardeners of sound knowledge on the principles of chemistry as essential to successful practice, or the economical and profitable production of crops. Science is now, fortunately, the handmaid of horticulture, and the gardener finds his handbook of chemistry useful when its instructions

and principles are carried out in the field of active operations. I can appreciate the horror with which some hard-headed gardeners regard theoretical horticulture, which means with them all theory and no practice; but I cannot understand why the gardener, still relying on his hand and on experience, cannot see his way to add science to practice. Technical education has greatly changed, and instead of being based on mere book-learning it has become "Practice with Science." The best results are obtained where theory is illustrated in practice, and this brings us to the subject on those sound principles.

FLUORINE.

This element, F, atomic weight 19.00, is very widely distributed indeed, and mainly known in combination, chiefly as calcic fluoride (CaF_2), and commonly called fluor, fluor spar, or Derbyshire spar. This is composed of 51.3 of calcium or lime, and 48.7 of fluorine. It is the source of all the hydrofluoric acid used in the arts. The substance fluorine has been detected in blood, milk, and urine; in plants; in copro-

lites and other mineral phosphates; and forms an essential part of the bones and teeth of animals. We, therefore, have it in solid and liquid fertilisers, in bonemeal, ground phosphates, and in superphosphates. It means we use it as manure, and its action, so far as I can make out, is decisively anti-fungoid, for I find cereals strengthened in the straw by the use of powdered fluor spar acting on silica by the sulphuric acid present in the soil and disengaging hydrofluoric gas, which corrodes or decomposes the silica.

Anyone can try this by treating powdered fluor spar with sulphuric acid, and covering with sand or powdered glass. It will give an idea of how fluorine applied infinitesimally in manures and fertilisers acts on the silica of the soil, and thus supplies plants steadily with that element. Make no mistake in the matter, for fluorine does nothing by itself, the sulphuric acid being essential for the evolution of the hydrofluoric acid, and this, decomposed by potassium and sodium, gives the fluorides of potash and soda, which act promptly on eelworms and on fungi. I had an idea, long ago, that these substances would save Potatoes from the disease caused by *Phytophthora infestans*, but I did not then know that

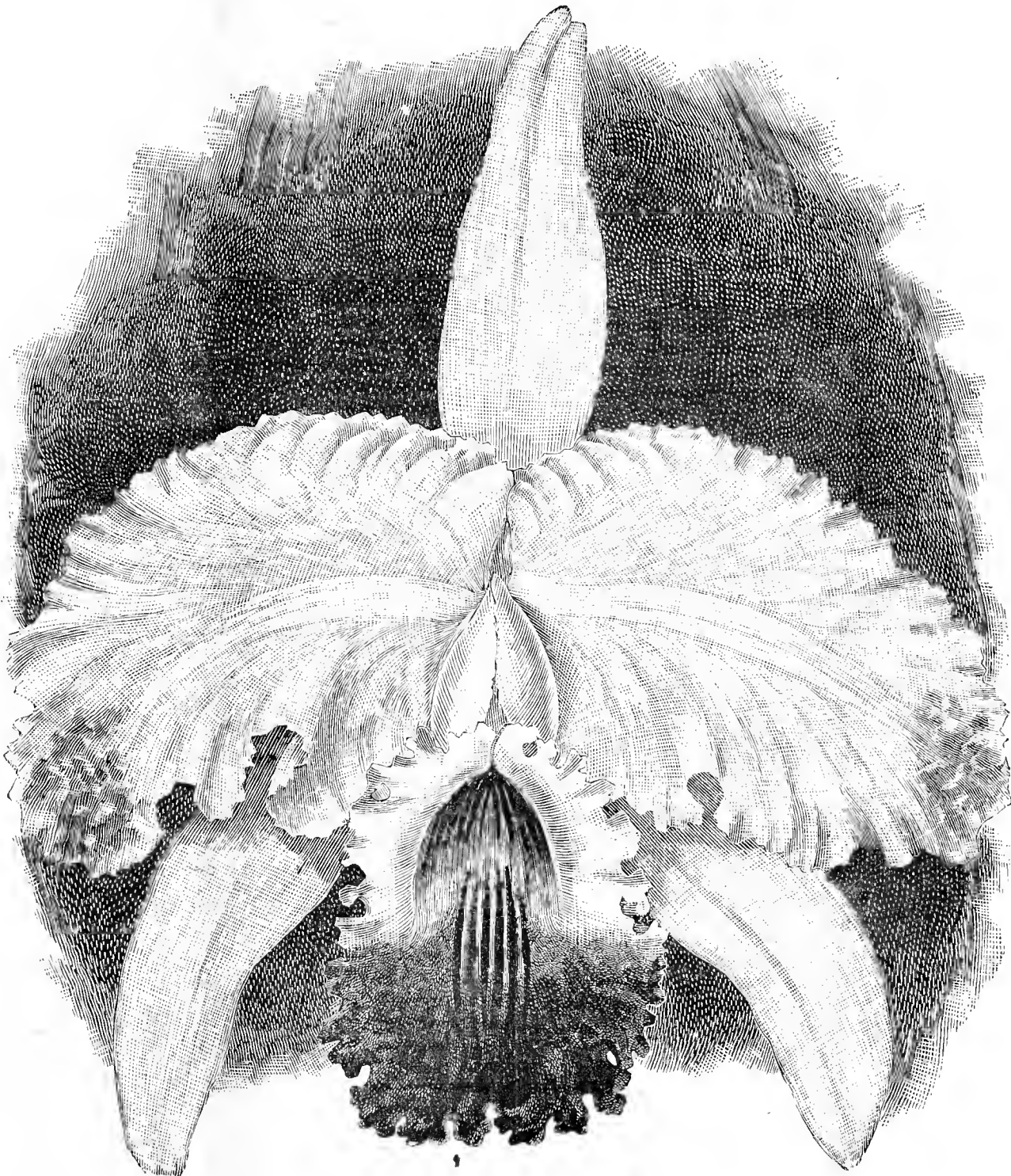


FIG. 98.—CATTLEYA MENDELI OAKES AMES. (See page 515.)

this pest passed over in the "set," and was practically out of reach by any dressing applied to the land.

HYDROFLUORIC ACID.

It may be stated that this substance is prepared by decomposing fluor spar with sulphuric acid in a retort of lead, the acid distilling over being collected in a leaden, platinum, or gutta-percha bottle. It is a very powerfully corrosive substance, and very dangerous to have anything to do with, even in the aqueous solution, being then very destructive to animal and vegetable tissues, and its vapour irrespirable. In this state it reacts with silica to form silicic fluoride—a transparent colourless gas, decomposed by water. This will be enough to connect the substances known as fluorine (F) and hydrofluoric acid (HF) with the silico-fluoride noticed in the *Journal of Horticulture* by Mr. W. Mills, October 21st, 1897, page 391, and put forward by him as a germicide.

Fluor spar, or Derbyshire spar, so far as I know, has not been used as a general dressing for land, though beds of it at Alton Moor and Castleton, in England, and extensive veins in the United States, exist. The use of it, however, for the experimental purposes already foreshadowed were satisfactory, the rate of application in powder being 1 stone per rod, 1 ton per acre. The acid I have not used, but have found fluoride of potassium a powerful fungicide and insecticide at a strength of 1 part in 1000 parts of water, or 1 fluid ounce to $6\frac{1}{4}$ gallons, this being strong enough for the foliage of most plants, or as much as it will bear without injury. The roots will endure a greater strength, but plants vary greatly in their susceptibility or otherwise to injury.

SILICO-FLUORIDES.

Mr. Mills, on the page previously quoted, gave instructions for preparing silico-fluoride of ammonium, and in the page following a communication was also given by another authority on the preparation of the silico-fluorides from Derbyshire spar. The substances are not new to me. I have had long acquaintance with them, except that of the silico-fluoride of ammonium ($(\text{NH}_4)_2\text{SiF}_6$), which easily dissolves in water. Silico-fluoride of potassium, K_2SiF_6 , or "Salufer," silico-fluoride of sodium, Na_2SiF_6 , and silico-fluoride of calcium, CaSiF_6 , were also sent me by Mr. Mills, with fluor-hydrate of sodium, $\text{NaF}_2\cdot\text{H}_2\text{O}$.

In bringing to bear upon these what little chemical knowledge I could, there were two ways in which I thought one or other of the preparations likely to prove valuable from the standpoint of utility—namely, (1) as a pest destroyer, and (2) as a plant nutrient—a combination which I hold to be imperative in these times of severe competition; therefore I merely satisfied myself of the killing value of the silico-fluoride of sodium and the fluor-hydrate of sodium, thus narrowing the thing down to the ammonia, potash, and lime preparations.

Having a study of eelworms in hand, and fine specimens to operate on, I subjected a few to various solutions in water and in soil, also in the infested tissues of plants. The results were very disastrous to these, and I came to the conclusion, rightly or wrongly, that the preparations were not suitable for use on the living parts of plants, especially foliage. This would, perhaps, have led many cultivators to abandon the articles. I, however, found that 1 oz. of either preparation per square yard would kill eelworms in the soil without injuring this for the purpose of plant growth.

The matter was thus resolved into a very simple affair, as the preparation, in the finest possible powder, could be used before sowing seeds or setting plants as a disinfectant and fertiliser at the rate of $302\frac{1}{2}$ lbs. per acre, $30\frac{1}{4}$ oz. per rod, or 1 oz. per square yard, leaving on the surface or only very lightly harrowing or raking in, as in the operations of drilling in seed. In no case should the substance come into contact with the seed or plant in the dry or powdered form. If desired, the article could be used in solution, 1 oz. to 1 gallon of water, and this quantity applied per square yard.

AN INTERESTING TRIO.

The three articles—(1) *silico-fluoride of ammonium*, (2) *silico-fluoride of potassium*, (3) *silico-fluoride of calcium*—killed eelworms, whiteworms, and slugs in the experimental plats, as ascertained by microscopic examination of soils and soil-waters, and of the three substances the silico-fluoride of ammonium most benefited the plants, these being selected of kinds the most liable to eelworm attacks in the several forms, such as stem-eelworm (*Tylenchus devastatrix*) on Clover and Onions; root-stem eelworm (*T. obtusus*) on Cucumbers and Vines; root-knot eelworm (*Heterodera radicola*) on Tomatoes, and seggling eelworm (*H. Schachtii*) on Hops and Sugar Beet. These pests, every one, lead free as well as parasitic modes of life, and the time to act upon them effectively is during their existence as eggs or larvæ while bathed in the organic solutions of the soil, and on which they unquestionably subsist in free state, being invariably associated with the debris of crops or vegetable remains decaying or decomposed.

On these points I have thoroughly satisfied myself by repeated investigations, and also that the time to destroy eelworms, whiteworms and slugs is when the land is bare. It can be done by lime, kainit, and nitrate of soda in a slow manner, in conjunction with thorough cultivation and due regard to the rotation of crops. About that there can be no question, for most ailments have origin in cultural errors and mistakes or procedure on lines antagonistic to the laws of health required by and essential to the growth, development, and maturity of the particular plant.

Prevention, not cure, should be the great objective of cultivators. To prevent any disease caused by vegetable or animal parasite means must be taken to kill the spores or eggs. This can be done in various ways, invariably whilst outward or exterior of the plant, for nothing applied

externally can have any effect on an organism in living tissues without absorption into them, and then the substance may prove as deleterious to the host as destructive to the parasite. That marks the difference between prevention and remedy. If eelworms, whiteworms, or slugs are in the soil the time to kill them is when there is no danger of prejudicing the current or proposed crop. Silico-fluoride of ammonium can be used much more freely than when the land is under crop; but I consider, according to the experimental data, that the amount quoted would be sufficient for general purposes, or in bad cases it could be doubled, this being matter for further investigation; suffice at present that the strength named for killing the pests be given as found.

ACTION AND RESULTS.

The silico-fluoride of ammonium dissolves in rain water, and at a strength of 1 oz. to 1 gallon of water kills eelworm in a short time. It does not appear to injure the roots of Tomatoes when applied to the soil, as in an ordinary watering, with the soil in a moderately moist condition when the solution is supplied. At the strength quoted it seems too strong for Cucumbers, but a solution of 1 oz. to $1\frac{1}{2}$ gallon of water had no injurious effect on the roots. At that strength, 1 in 240, the solution also kills eelworms, but requires a longer time. In both cases the eelworms collapse in the tissues, and these also succumb. That is where the difficulty comes in—nothing will restore destroyed tissues. The plants may die, or they may live after treatment, for all depends upon the extent of the damage inflicted by the eelworm, and possibly also by the deleterious action of the solution on the cells in contact with the damaged parts. The latter are quickly saturated by the solution, but that of imbibition by adjacent living cells is quite another matter, and depends partly on the plant itself and in part on the substance.

The action of the silico-fluoride of ammonium is corrosive. It kills pests by that process. The effect on slugs is a sight to see once only, and never desire to behold again, for they simply appear to boil by the chemical action of the powder. Eelworms perform their graceful evolutions in the vain endeavour to escape, and soon assume needle form. Whiteworms (*Enchytræus* sp.) seldom make more than a wriggle to right and left, and die. In a 1 in 1000 solution, 1 oz. silico-fluoride of ammonium to $6\frac{1}{4}$ gallons of water, the pests named succumb in the course of time, but whether that would suffice as a general preventive, applied in the ordinary course of watering, remains to be tested, and the most that I am prepared to say is that it would probably answer that purpose, and also as a repressive measure in the early stages of attack. This never occurs when the free eelworms are bathed in a solution hurtful to them, as they make "tracks" away from such soil as fast as possible.

MANURIAL PROPERTIES AND COST.

Of the value of the article, silico-fluoride of ammonium, as a manure, it may be said that it contains over 19 per cent. of ammonia, therefore almost equal in that respect to ordinary sulphate of ammonia, and while the land would be disinfected by a suitable top-dressing, and practically freed from pests, the ammonia would remain for the benefit of the crop. According to Mr. Mills' former article the cost would be £1 per cwt., or 10s. cost for killing the eelworm, and 10s. value as manure, per each cwt. applied. On this point, however, time only can give anything warrantable, and experiments in that direction must rest with cultivators.

The silico-fluoride of potassium has, so far as I have tested, more decisively anti-fungoid properties than the ammonium preparation, also that of calcium, but the sodium, if anything, tends to favour cryptogamous parasites by its action on the tissues of the hosts. What would be the difference in cost of silico-fluoride of ammonium over the silico-fluorides of potassium and calcium I do not know. Perhaps Mr. Mills will supply particulars in those respects. I shall not continue further experiments at present, as my material has become exhausted, the eelworms having departed—I may say that the silico-fluorides appear to advantage in the experiments as disinfectants of land foul with root-pests. In other respects the articles would probably usefully aid the plant by fortifying it with material resistive of invasion by enemies; at least such are the deductions from the experiments.—G. ABBEY.

CLEANSING WALL TREES.

EFFORTS must be made to cleanse wall trees if the shoots are infested with black or green aphids. Cherries, Plums, Peaches, Nectarines, and Apricots are the most liable to attacks from these insects. Cold winds and checks to growth, as well as lack of moisture for the root system, are conducive of attack. In cold, dull weather the syringe or water engine is not employed so freely on wall trees, hence insects gain a foothold and increase freely under undisturbed conditions.

Dusting with tobacco powder is efficacious when the pests are first noticed. On becoming a numerous colony, a strong application of some approved insecticide is needed. A bitter solution not only destroys them, but renders the foliage distasteful to fresh broods seeking to become established. Quassia chips boiled and the solution combined with dissolved softsoap, forms a serviceable mixture, but it is not superior to the prepared quassia extract which can be procured ready for use, only requiring mixing with water at the rate of 20 gallons of water to a quart of extract.

It is important that Cherry trees be freed from these pests before the fruit commences colouring, and all trees infested are better for being cleansed as soon as possible. It is often delayed too long with disastrous results.—A KENTISH GARDENER.

HARDY BULBS—A REVIEW.

MOST of our hardy bulbous plants have now shed their beauty, and while they continue to provide substance for another floral issue next season, we may profit by a little meditation on what they have been, or may be made to become, as garden ornaments in the future.

The past winter was a mild one, and our various winter and spring flowers had a good chance to display their charms. Among the first of bulbous plants in flower was *Crocus Imperati*. So early as the 6th of January a small bed was adorned with its flowers. The petals were deep lilac on the inside, and on the outside, seen when the flowers closed, they were paler lilac and distinctly striped with a deep mauve. In a similar bed there was another species, *Crocus chrysanthus*, in bloom. This, as its specific name implies, is of a golden yellow colour, and formed a good contrast to *Imperati*. The various forms of *C. aureus* and *C. biflorus*, planted with the bulbs a few inches apart on mounds or banks, give a fine effect in the middle and end of February. The numerous varieties of *C. vernus* and *C. versicolor* also do well in such places. We may look forward and expect the autumn-flowering species, amongst the best being *C. iridiflorus*, *C. nudiflorus* and *C. speciosus*.

As regards the Snowdrop, *Galanthus nivalis*, there is little need for comment, but an opinion may be given with regard to planting in places to produce a good effect. This year I noticed several beds crowded with Snowdrops, and thought such an arrangement unsatisfactory. It seemed too extravagant to be beautiful. A better plan was exemplified in another bed. In it the Snowdrops appeared in small clumps under the Lilac shrubs with which the bed was planted. The bare stems of the Lilacs formed a sort of network as a light veil for the pure beauty of the Snowdrops behind, and the graceful form of the individual flowers was better shown than in the mass of white in the other bed; also when planted in small clumps about old tree stumps near trailing Periwinkle or Ivy they looked quite at home.

Eranthis hyemalis, the Winter Aconite, although not strictly a bulbous plant, for it has tubers instead of bulbs, is worthy of notice. Forming the groundwork of a bed of small deciduous shrubs, this plant with its bright yellow flowers was highly effective, and that so early as January 21st.

In the rockery in February patches of *Bulbocodium vernum* brightened corners with its violet purple flowers. Here also, as well as in beds, the little blue *Scilla sibirica* compelled admiration. About the beginning of March we had *Chionodoxa Luciliae*. Its bright blue flowers with a white eye in each look well in almost any position; but as groundwork for a bed of shrubs or in large thin patches on a grassy bank, it appears most effective. A large bed of *Forsythia suspensa*, with the *Chionodoxa* for a groundwork, formed quite a picture in the middle of March. The bright blue and white flowers harmonised well with the yellow flowers of the *Forsythia* on the long slender branches.

With regard to *Narcissus*, I think the review must be very general—a mere glance, for the genus affords scope for pages of writing. The good old Daffodil, *N. pseudo-Narcissus*, shows its fine yellow trumpet-bearing flowers early in March. It is a native of Britain, and has been well known for a long time, so it scarcely needs comment here. In large clumps on a rising ground its beauty is as well seen (if not planted thickly) as it is dotted about the outside of a shrubbery. The garden forms of this species are legion, which we may notice as we glance through the hosts of varieties of *Magni*, *Medio*, and *Parvi-coronati* groups in any good treatise on the genus.

N. incomparabilis also flowers in March. It looks well in the same positions as the foregoing species, and its orange yellow crowns and paler yellow perianth divisions make it a worthy successor to the Daffodil. The double form of the whitish variety of this species, sometimes called Orange Phoenix, is occasionally seen in gardens. Another double form is commonly called Butter-and-Eggs, which name conveys an idea of its colour. This poor plant has the misfortune of bearing a long name, which, when given in full, is *Narcissus incomparabilis aurantius flore pleno*.

The Jonquil, *N. Jonquilla*, is a neat plant, and with its small bright yellow flowers in clusters of four to six on each scape is worthy of a place on the grass round the edge of a shrubbery. Its worth is enhanced by the sweet scent of its flowers. The Poet's Narciss, or Pheasant's Eye, *N. poeticus*, is a well known species, and one of the sweetest of the genus. It has a few good varieties, varying partly in their period of flowering, *recurvus* being a late one and *poetarum* an early one. *N. bulbocodium* is a very distinct species. In shape the flower resembles a crinoline skirt, an old time vulgarity. Its colour is a bright yellow, and it looks well in a sheltered corner of the rockery. The variety *monophyllus* is worthy of mention; in it the corona and perianth are paler in colour than the type—indeed, they are almost white.

The Hyacinth may next be dealt with. Most of the garden varieties originated in one species, *H. orientalis*. There is a species called *H. romanus*, which is not, however, the Roman Hyacinth as known in gardens. The latter is really a variety—i.e., *albulus*—of *H. orientalis*. The qualities of the numerous varieties now in cultivation can best be comprehended by perusing the special literature on the subject. I have noticed during the past season a decline in the popularity of this plant for garden decoration. This may be partly due to the wonderful development of *Narcissi* and *Tulips* which seemed to claim the admiration of everyone.—EXCELSIOR.

(To be continued.)

YORK HORTICULTURAL SHOW.

JUNE 15TH, 16TH, AND 17TH.

LAST year's York Gala will ever be memorable in the horticultural world, because it was then that the whole of the tents were blown to ribbons in the gale that raged on the morning of the first day of the show. It will be remembered that it was the occasion of an enormous amount of damage, not only to the tents themselves, but also to many of the valuable plants therein contained. This year, happily, there was no such catastrophe to record. On the contrary, the opening day was a lovely one, the weather being fine without being oppressively hot. This was very advantageous, as the number of people who visited the exhibition during the afternoon were able to examine the multifarious products in some degree of comfort, which is by no means always the case at exhibitions of this character. The several tents were all most spacious, and locomotion was fairly comfortable throughout the whole of them, except, perhaps, in one or two congested spots.

It would be manifestly unfair to endeavour to make any comparison between this season's show and that of last year, on account of the occurrence just noted, and such will not therefore be done. We may, however, compare other seasons, and when we do so we find the majority is firmly of the opinion that, taken as a whole, there is a decided advance, though one or two sections are distinctly inferior to what has become the custom, Roses being particularly so. There was scarcely any competition throughout, and there were few first quality blooms staged. This was the cause for much regret, as the York Roses have on occasions been amongst the finest at any provincial show, and this, notwithstanding the earliness of the Gala dates. The weather, that all-important factor in the horticultural world, has been by no means conducive to the production of early Roses, and York will not be the only sufferer from this cause. Fruit, too, was not quite up to the standard, but the groups and other portions of the exhibition were very fine indeed, and a credit to their growers and staggers.

The planning of the several marquees, so as to produce the best general effect, had been done skilfully, but points were lost here and there which rather marred the spectacle. Then, too, there is plenty of room for improvement in the placing of the individual exhibits in any particular class, which appears to be left entirely to the discretion of the exhibitor, with the result that different entries were often yards apart. If this benefited the display it could be understood, but where nothing is gained in this respect we can see no object in doing it. As a result of this we were unable to find a few of the classes, and can only give notes of those that were seen. We might point out to the Gala Committee that the officiousness and incivility of some of the officials of the show were both annoying and unwise, and at the same time we would accord a word of thanks to Sir Christopher Millward for his unfailing courtesy, and his readiness to render any necessary assistance.

GROUPS AND SPECIMEN PLANTS.

The premier position for a group of miscellaneous plants in or out of bloom, arranged for effect, and occupying a space not exceeding 300 square feet, was secured by Mr. C. J. Mee, Nottingham. The arrangement was a very charming one, though the effect was slightly marred by an immense *Kentia Belmoreana* in the front. The mossed surface was undulating, and as specimens here and there *Crotons* were admirably employed. *Odontoglossums* were effective, as were *Begonias*, *Anthuriums*, *Palms*, *Ferns*, *Cypripediums*, and others. Mr. J. Wilson, gardener to Sir Jas. Reckitt, Bart., Swanland Manor, who secured the second place, had a very similar arrangement. The plants, however, were not so lightly or gracefully arranged, though they were skilfully chosen and finely grown. It must have been a difficult matter to decide the respective positions of these. Mr. J. McIntyre, gardener to Mrs. Gurney Pease, Woodside, Darlington, occupied the third position, but though fine plants were employed, it lacked the characteristic features of the other two. The fourth position went to Mr. W. Vause of Leamington, and the fifth to Messrs. R. Simpson & Son, Selby.

In the class for ten stove or greenhouse plants in bloom and six foliage plants Mr. Jas. Cypher, Cheltenham, went to the front with his unique plants. The specimens were *Pimelea diosmaefolia*, *Erica Cavendishi*, *Clerodendron Balfourianum*, *Phenocoma prolifera* Barnesi, *Erica depressa*, *Stephanotis grandiflora*, *Anthurium Wardi*, *Bougainvillea Cypheri*, *Erica hirsuta alba tinctoria*, *Franciscea eximia*, and *Erica ventricosa magnifica*, with *Kentia australis*, *Cycas undulata*, *Latania borbonica*, *Kentia Belmoreana*, *Phoenix rupicola*, and *Kentia Fosteriana*. Mr. F. Nicholas, gardener to the Marquis of Zetland, Marske-by-the-Sea, was a very creditable second, his specimens of *Erica depressa multiflora*, *Azalea Duc de Nassau*, *Aphelaxis rosea*, and *Croton angustifolium* being very fine. The third position was assigned to Mr. W. Vause, who grows specimen plants so well. Mr. J. Cypher was again ahead for six specimen plants in bloom, showing *Pimelea diosmaefolia*, *Bougainvillea glabra*, *Aphelaxis macrantha rosea*, *Anthurium Scherzerianum*, *Clerodendron Balfourianum*, and *Erica depressa*. Mr. Chas. Lawton, gardener to H. Harrison Broadley, Esq., Welton House, Brough, was a splendid second; and Mr. W. Vause third.

Mr. J. Sunley, Milford Junction, went to the front for three specimen plants in flower with *Genetyllis tulipifera*, *Anthurium Scherzerianum*, and *Erica ventricosa grandiflora*. Mr. Lawton was second. For a single specimen stove plant in bloom Mr. C. J. Mee was first with *Anthurium Scherzerianum*; Messrs. R. Simpson & Son second with *Stephanotis floribunda*; and Mr. J. R. Rollinson, gardener to W. Bateman, Esq., Pannal, Leeds, third with *Anthurium Scherzerianum*. Mr. W. Vause was first with *Aphelaxis macrantha rosea* in the class for a single greenhouse plant

in bloom, and was followed by Mr. G. Dobson, gardener to R. Lawson, Esq., Clifton, York, with *Hydrangea hortensis*, who took second prize.

Mr. J. McIntyre was well ahead for six foliage plants with *Croton* Queen Victoria, *C. angustifolia*, *Cycas sinensis*, *Kentia Fosteriana*, *K. Belmoreana*, and one other. Mr. Lawton was a splendid second prize winner. The third place was adjudged to Messrs. R. Simpson & Son, and the fourth to Mr. W. Vause. Mr. J. McIntyre was again first for three foliage plants with *Croton Warreni*, *Cycas revoluta*, and *Kentia Belmoreana*. Mr. W. Townsend, gardener to E. B. Faber, Esq., was second; and Mr. C. Lawton third.

For three Azaleas Mr. J. Sunley, with admirably flowered plants, was first, and was apparently the only exhibitor. Mr. J. Cypher won with a single Azalea, and was followed by Messrs. W. Jackson & Co., Bedale, and Mr. J. R. Rollinson, who were second and third respectively. Mr. J. McIntyre had grand plants of *Crotons* in the class for four, and was followed by Messrs. R. Simpson & Son and Mr. C. Lawton, who were second and third respectively. Mr. J. Cypher was first for three Cape Heaths with *depressa*, *affinis*, and *ventricosa grandiflora*. Mr. C. Lawton secured second place, and Mr. J. Sunley third.

For six exotic Ferns Mr. J. McIntyre had excellent specimens of *Adiantum Mariessi*, *Microlepia hirta cristata*, *Davallia fijiensis*, and *D. Mooreana*. Mr. J. Snowden, gardener to the Rev. G. Yeats, Heworth, was a very good second. Mr. J. McIntyre was also first for three Ferns with *Davallia fijiensis*, *D. Mooreana*, and *Gleichenia rupestris glaucescens*. Mr. F. Nicholas was a very creditable second, and Mr. J. Snowden third. The last named exhibitor was first for a single Fern with *Adiantum farleyense*. Mr. J. McIntyre was second with the same, and Mr. F. Nicholas third with *Lomaria zamiaefolia*.

In the class for ten hardy Ferns, distinct, the competition was not very keen. Mr. J. Nicholson, Bootham Stray, York, being first with fine specimens of *Trichomanes radicans*, *Adiantum pedatum*, *Osmunda cristata*, and others. Messrs. R. Simpson & Son were placed in the second position. Messrs. J. Nicholson and R. Simpson & Son maintained the same position for six hardy Ferns, and were followed by Mr. J. Snowden.

ORCHIDS.

The Victoria prize for a group of Orchids in bloom, arranged for effect, occupying space not exceeding 150 square feet (Palms and Ferns were admissible), was secured by Mr. J. Cypher, who showed in his customary splendid style. Not only was there excellence in the quality of the Orchids utilised, but the arrangement of them showed consummate skill. Mr. J. Robson, Altrincham, was second, but while the flowers were of fine quality, the arrangement lacked the grace of the premier group.

For ten Orchids Mr. Jas. Cypher held the foremost position with handsome specimens of *Lælia purpurata alba*, *Thunia Veitchi*, *Cattleya Warneri*, *Odontoglossum hystrix excellens*, *Cattleya lobata*, *Epidendrum prismatocarpum*, *Lælia tenebrosa*, *L. purpurata Schofieldiana*, and *Cattleya Mossiae*. Mr. Barker, gardener to W. P. Burkenshaw, Esq., Hull, was a creditable second; and Mr. W. Townsend third. Mr. J. Cypher was also first for six and three Orchids, and Mr. C. Lawton for one plant with a grand specimen of *Lælia purpurata*. In the amateurs' class for six Orchids Mr. Barker was a fine first, as was he in the special class for four Orchids, the prizes being given by Messrs. Backhouse & Son, York.

PELARGONIUMS AND FUCHSIAS.

Mr. R. McIntosh, gardener to J. T. Kingston, Esq., Clifton, York, sent superb examples in the class for twelve Show Pelargoniums. The plants were perfect examples of culture, and such as are seldom seen. The varieties comprised *Garibaldi*, *Miss Winnie Kingston*, *Madame Thibaut*, *Madame Hilare*, *Lady Isabella*, *Kingston Beauty*, *Rose Queen*, *Triomphe de St. Mandé*, *Duchess of Bedford*, *Edward Perkins*, *Queen Bess*, and *Tommy Dodd*. Mr. I. Eastwood, gardener to Mrs. Tetley, Foxhill, Weetwood, secured second place, and also staged remarkable plants. These two were the only exhibitors in the class. The same position was maintained in the class for six specimens, but was reversed for three plants.

Mr. H. Pybus, Ripon, exhibited superb specimens in the class for six Ivy-leaved Pelargoniums, the varieties *Prince of Wales*, *Beauty of Castlehill*, and *Souvenir de Chas. Turner* being the best. Mr. I. Eastwood was second, and Mr. R. McIntosh third. Mr. Eastwood was first for three Ivy-leaved Pelargoniums with superior plants. The second prize went to Mr. H. Pybus, and the third to Mr. G. Cottam, Cottingham. Mr. I. Eastwood was first for three double Pelargoniums, Mr. H. Pybus being second, and Mr. G. Clarke, gardener to Miss Wharton, York, third.

In the class for nine double Pelargoniums Mr. I. Eastwood was a decided first, though Messrs. R. Simpson & Son, who were second, showed very finely. Mr. I. Eastwood was in great form in the class for twelve Zonal Pelargoniums, his specimens being superb. The trusses of flowers were large, as were the individual pips. Mr. H. Pybus was second in this class, and first for six plants, showing well in each instance. Mr. J. Eastwood had to be content with second position, but went ahead of Mr. Pybus again in the class for three Zonals.

Mr. G. Clarke took the premier award for three splendid Fuchsias, the plants being of fine form and well flowered. Mr. R. McIntosh was a creditable second, and Mr. I. Eastwood third. For six specimens Mr. R. McIntosh went to the front in good style, and was followed by Mr. I. Eastwood and Mr. G. Clarke in the order in which the names are given.

BEGONIAS, CARNATIONS, AND ROSES.

Mr. J. Haigh, gardener to G. P. Kirby, Esq., York, was a decided first for eight Begonias with well flowered plants; Mr. G. Clarke was second, and Mr. T. Douthwaite, gardener to Miss Barstow, Garrow Hill, York, third. Messrs. R. Simpson & Son and G. Clarke were the only exhibitors in the class for a group of Begonias, neither showing anything specially praiseworthy.

Mr. Jas. Tullett, gardener to Lord Barnard, Raby Castle, Darlington, was the only exhibitor in the class for a group of Carnations. He was accorded the premier award, and the Malmaisons, of which the group was mainly composed, deserved this honour. For twelve Gloxinias Mr. G. Dobson was first with good plants, and was followed by Mr. W. Fletcher, gardener to T. M. Lambert, Esq., York, and Mr. W. Spavin, gardener to J. Bellerby, Esq., York, in the order named. Mr. W. Fletcher was first for eight fine *Calceolarias*. Mr. E. Everard, gardener to Mrs. Gutch, York, was second, and Mr. W. Spavin third.

The class for a collection of Roses in pots did not bring forth anything particularly praiseworthy. Messrs. W. Jackson & Co. were first, and Mr. H. Pybus third, there being apparently no second prize awarded. In the class for nine Roses in pots, Messrs. W. Jackson & Son were first, Mr. H. Pybus second, and Mr. I. Eastwood third. For seventy-two cut blooms, in not less than thirty-six varieties, Messrs. J. & A. May, Bedale, were first, their best blooms being *Ulrich Brunner*, *Gustav Piganeau*, *Maréchal Niel*, *Mrs. J. Laing*, *Niphetos*, *The Bride*, *Caroline Testout*, *Fisher Holmes*, *Marie Verdier*, *Suzanne Marie Rodocanachi*, and *Marie Van Houtte*. Mr. G. Mount, Canterbury, with smaller flowers, was second.

For forty-eight distinct single trusses, Mr. G. Mount was decidedly first, though his flowers were by no means up to the Canterbury grower's usual form. Messrs. J. & A. May were second, and the same order was maintained for thirty-six distinct single trusses; but again the stands were weak. Messrs. J. Burrell & Co., Cambridge, were first for twenty-four distinct Roses, the blooms of *Catherine Mermet*, *A. K. Williams*, *The Bride*, *Horace Vernet*, *La France*, and *Innocente Pirola* being good. Mr. G. Mount was second, and Messrs. J. & A. May third. Messrs. J. Burrell & Co. and G. Mount were first and second for eighteen varieties, Mr. W. Hutchinson, Kirby Moorside, being third.

For twelve white and yellow Roses, in not less than six varieties, Mr. G. Mount was first with *Maréchal Niel*, *Anna Ollivier*, *Niphetos*, *Caroline Kuster*, *Perle des Jardins*, and *Marie Van Houtte*. Messrs. J. & A. May were second, and Mr. W. Hutchinson third. In the amateurs' classes for twelve and eighteen Roses respectively, Messrs. W. Hutchinson, I. Eastwood, J. Mallender, Worksop, and J. Hume, Clifton, were the chief prize-takers.

CUT FLOWERS.

Messrs. Perkins & Sons, Coventry, were easily first with a hand basket of cut flowers, open. Mr. Geo. Webster, Sunderland, was second; and Mr. Wm. Vause, Leamington, third. Messrs. Perkins & Sons were first with their hand basket of cut flowers (Orchids excluded), bridal bouquets, and for ball bouquets; being followed by Messrs. Webster, Vause, and Cotham, Cottingham. Pansies were not extensively shown. The first prize for forty-eight Fancy Pansies was taken by Mr. John Smellie, Busby, Glasgow; Mr. M. Campbell, Blantyre, N.B., taking the second prize. Mr. M. Campbell was first for twenty-four Fancy Pansies. In the other classes Messrs. Campbell, Smellie, and Mr. Ramsden, Halifax, took the remaining prizes.

FRUIT

With but few exceptions there was a deficiency of colour in the Peaches and Nectarines shown. White Grapes, too, were not up to the usual high standard one has been accustomed to see at York. Some well-finished bunches of Black Hamburgs were shown. Mr. J. Tullett, gardener to Lord Barnard, Raby Castle, Darlington, was first with a decorated table of ripe fruit. His exhibit comprised well-finished Black Hamburg and good bunches of Muscat of Alexandria Grapes, that required a little more time to finish them, a small Pine Apple, Royal George Peach, Lord Napier Nectarine, Royal Sovereign Strawberry, Bananas, and Figs. The decoration of this table was superb, Mr. Tullett relying chiefly on *Odontoglossum Alexandræ* and *Asparagus plumosus*, a few Grasses being lightly distributed throughout the whole. Mr. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, was second. This exhibitor had the best dish of Royal Sovereign Strawberry in the show. Mr. McIndoe, gardener to Sir J. W. Pease, Hutton Hall, was third. This exhibitor had the best dish of Lord Napier Nectarines on his table in the show. The competition between the last two exhibitors was very close, but eventually Mr. Goodacre was placed second by only a few points. Mr. J. Sinclair, Blake Street, York, obtained fourth prize. The flowers used in the decoration of this table were yellow Iris.

Mr. McIndoe was the only exhibitor of six kinds of fruit, and was deservedly awarded the first prize. It consisted of Black Hamburg and Foster's Seedling Grapes, a Melon, and Peaches. Mr. McIndoe was also first with four dishes, showing Black Hamburg Grapes, Scarlet Premier Melon, Stanwick Elruge Nectarine, and Brown Turkey Figs. Mr. Easter, gardener to Lord St. Oswald, Nostell Priory, Wakefield, was a good second. The third prize went to Mr. Goodacre, Lord Lathom being awarded fourth prize.

For three bunches of Black Hamburg Grapes, Mr. Jas. Johnson, Boston Spa, was an easy first with good bunches, having large well finished berries; Mr. Leadbetter second; Mr. J. Tullett third, and Mr. Alsopp, gardener to S. J. Foljambe, Esq., Osberton, Worksop, fourth. Mr. J. Tullett was first with white Grapes, showing large bunches of Foster's Seedling; Mr. Nicholls, gardener to Lady Beaumont, Carlton Towers, second with Buckland Sweetwater; Mr. G. Wilson, gardener to Sir Jas. Reckett, Bart., Swanland Manor, Brough, third.

The first award for six Peaches went to Mr. A. Alderman, gardener to J. D. Ellis, Esq., Worksop, who showed fine fruit of Hale's Early; Mr. J. Easter was a close second, and Mr. J. Wallis, gardener to Ralph Sneyd, Esq., Keele Hall, was third. Mr. Pike, gardener to C. H. Wilson, Esq., Warter Priory, was awarded first prize for six Nectarines, the variety being Lord Napier; Mr. Goodacre was second with the same variety; Mr. Slade, gardener to the Duke of Newcastle, Clumber, Worksop, third,

and Mr. J. McIndoe, fourth. Mr. J. McIndoe was first for a scarlet fleshed Melon, Mr. Goodacre was second, and Mr. F. Steadman, gardener to Colonel Thorpe, Coddington Hall, Newark, third.

Mr. Ashton, gardener to the Earl of Lathom, was first and second in the class for green-fleshed Melons; Mr. J. McIndoe third. Mr. Slade was first with a white-fleshed Melon, Mr. F. Steadman second, Mr. J. McIndoe third. For a dish of Figs Mr. A. F. Pike was first, Mr. J. P. Leadbetter second, Mr. J. Wallis third.

There were only two exhibitors of Strawberries, Mr. A. Alderman being an easy first with Royal Sovereign; Mr. G. A. Keywood, gardener to W. H. Battie-Wrightson, Esq., Cusworth Hall, Doncaster, second. Mr. Slade was first for a dish of Tomatoes, showing grand fruit of Perfection; Mr. A. H. Hall, gardener to J. C. Waterhouse, Esq., Prestbury, second; Mr. Nichols and Mr. Keywood being third and fourth.

VEGETABLES.

Messrs. Sutton & Sons, Reading, and Messrs. Webb & Sons, Stourbridge, offered valuable prizes for collections of vegetables, Mr. J. McIndoe taking first in each class, Vegetable Marrows, French Beans, and Peerless Marrowfat Peas being very good. Mr. S. Mortimer, Farnham, Surrey, received an award of merit for his new Cucumbers Sensation (Telegraph type) and The Keeper, a black spine variety.

MISCELLANEOUS EXHIBITS.

The groups of plants staged by various growers in the "not for competition" section were numerous and diversified, showing excellent culture, and, in many instances, great taste in arrangement. Messrs. J. Veitch and Sons, Ltd., Chelsea, sent an exhibit of considerable size, which comprised many kinds of plants. The firm's superb Caladiums were a show in themselves, the delicately tinted leaves being very handsome. Prominent amongst the varieties were candidum, Assungay, Leonard Bause, Silver Queen, Miss Ellen Terry, and Exquisite. In the mixed plants, *Dracena Exquisite*, hybrid *Rhododendrons*, *Streptocarpus*, *Crotons*, *Carnations*, *Begonias*, and *Palms* were fine. The Chelsea firm was, as usual, in strong force with *Orchids*, which were grandly shown. The flowers and plants were of excellent quality, the colours being very rich. Such as *Cattleya Mossiae Reineckiana superba*, *C. Mendeli virginialis*, *Disa Veitchi*, *Laelia purpurata*, *Laelio-Cattleya Canhamiana*, *L.-C. Hippolyta*, with *Cypripediums*, were particularly conspicuous.

One of the most effective exhibits in this section was that shown by Messrs. W. Cutbush & Son, Highgate. The surface was undulating, and the excellent plants comprised dwarf specimens of *Malmaison Carnations* carrying good flowers, *Lilium Harrisii*, *Crimson Rambler Roses*, *Cannas*, *Azaleas*, *Hydrangeas*, *Ericas*, *Palms* and *Ferns*. *Caladiums* from Messrs. J. Peed & Son, West Norwood, were very beautiful, and were capitally arranged for effect. Light varieties, such as *Leonard Bause*, *Lord Derby*, *Duchess of Teck*, *Mrs. W. E. Gladstone* and *Silver Cloud* were interspersed amidst such darks as *John Peed*, *Maria Mitjana*, *Duke of Teck*, and others. Single and double *Begonias* also came from Norwood, the former being especially fine. *Gloxinias* and *Streptocarpus* in trays completed the group.

Differing entirely from every other group in the show, and gaining in effectiveness thereby, Messrs. Fisher, Son, & Sibray, Ltd., Handsworth, Sheffield, are to be congratulated on their exhibit. About 900 square feet were occupied with well diversified plants. A bank of *Rhododendrons* was handsome, and the specimens were capitally arranged to appear as natural as possible. The trusses were grand. Of the foliage plants *Japanese Maples*, *Pyrus aria himalaica*, *Purple Oaks*, with bunches of the best forms of *Lilacs* included, were charming. The firm sent also miscellaneous stove and greenhouse plants, such as *Anthuriums*, *Nepenthes*, *Crotons*, *Caladiums*, *Begonias*, *Bertolonias*, *Palms*, *Ferns*, and others. The new *Croton Her Majesty* showed up well, as did *Dracena Veitchi variegata*.

The whole central table in one of the tents was occupied by Messrs. Sutton & Sons, Reading, with one of their customary displays of flowers and vegetables in pots and boxes. Tomatoes were grand trained in single stem and other forms. *Prince of Wales*, *Peachblow*, *Abundance*, *Sunbeam*, and *Princess of Wales* were particularly effective. No less superior were the Peas, which included *Early Giant*, *Perfection*, *Sutton's Forcing*, *Excelsior*, and others. The excellence of the Reading *Gloxinias* has long been recognised. The strain is extremely floriferous, and the colours range from pure white to rich crimson and blue. Spotted varieties were numerous, as were the scarlet selfs. Some fine *Mignonette* completed the stand.

Miscellaneous cut flowers and plants comprised the large group sent by Messrs. R. Smith & Co., Worcester. Specimen *Clematis* were, needless to say, fine, as were *Roses* in pots, *Hydrangeas*, *Pyrethrums*, *Irises*, *Begonias*, *Pæonies*, and many others, backed by graceful *Bamboos*. The hardy herbaceous flowers from Messrs. Dickson, Ltd., Chester, were shown effectively in medium sized bunches. Very good were *Spanish* and *German Irises*, *Liliums*, and single and double *Pyrethrums*, *Armerias*, *Sparaxis*, *Primulas*, *Pæonies*, *Poppies*, and *Muscari*. *Carnation Duchess Consuelo* also came from the Chester firm. Mr. G. Yeld, Clifton Cottage, York, sent some plants of his own raising, the *Irises* being particularly good. *Dawn*, *Hera*, and *Sincerity* were splendid, as were *Hemerocallis Stella* and *Apricot*.

Pyrethrums formed the backbone of the group from Messrs. W. Clibran and Son, Altrincham, and they were of good quality, both in single and double varieties. *Irises* were also noted, as were *Pæonies* and *Violas*, arranged in flat trays. Messrs. Jarman & Co. sent from Chard *Rhododendrons*, *Roses*, *Poppies*, *Pyrethrums*, *Pæonies*, and others. *Ferns* from Messrs. W. & J. Birkenhead, Sale, were cool and refreshing in the warm tents, amidst the many brightly flowered hardy plants and *Orchids*. The kinds and varieties were exceedingly numerous, and all bore the impress of good culture. The major portion were growing in about 3-inch pots, though a few were in larger sizes and baskets. Mr. Amos

Perry, Winchmore Hill, sent herbaceous flowers in variety. Mr. W. Sydenham, Birmingham, showed a table of flowers in silvered receptacles, with which a charming display was effected. Such simple flowers as *Carnations* and *Sweet Peas* were employed, with *Ferns* and *Smilax* for greenery. Messrs. H. Low & Co. Bush Hill Park, showed a fine bank of *Orchids*, in which forms of *Cattleya Mossiae* were numerous and wonderfully rich in colour. Varieties of *Odontoglossum crispum* were well shown, and the same may be said of the *Cypripediums*, *Dendrobiums*, and *Oncidium*s; but these were in much smaller numbers. Very charming were *Cattleya Mossiae* E. Ashworth, C. M. Wagneri, and C. M. Arnoldiana, with *Cypripedium Lawrenceanum Hyeanum*.

Messrs. B. S. Williams & Son, Upper Holloway, exhibited *Orchids* arranged with *Ferns* and other foliage plants. The arrangement was very good, a charming effect being produced. Conspicuous amongst the *Orchids* were *Cattleyas*, *Cypripediums*, *Odontoglossums*, *Dendrobiums*,



FIG. 99.—ASCLEPIAS TUBEROSA.

Vandas, *Thunias*, *Sobralias*, and *Cymbidiums*. *Carnations* were also utilised in one corner of the group. Messrs. Sander & Co., St. Albans, were in first-class form, and their exhibit attracted an immense amount of attention. The splendid *Acalypha Sanderi*, *Dracena Sanderiana*, *D. Godseffiana*, *Laelia tenebrosa*, *Laelio-Cattleya Duke of York*, *L.-C. Lily Measures*, *Odontoglossums*, *Petunia Mrs. F. Sander*, white, and others were noticed.

ASCLEPIAS TUBEROSA.

WE can best give "G. J. R." the information he desires by reproducing the woodcut of this plant, which we do in fig. 99. Comparatively few species of the *Asclepias* are cultivated in borders as hardy plants, and perhaps there are few that are really worthy of a place amongst the many attractive plants now grown in British gardens. No doubt can, however, be entertained respecting the merits of the plant represented in the accompanying woodcut. In warm soils and situations it thrives vigorously, especially if the natural drainage be good, and being readily increased fine clumps can soon be had. The flowers are bright orange-red, and are produced in dense corymbose heads at the tops of the stems, which are clothed with narrow sessile leaves. It forms compact bushy plants, 2 feet or so in height, and it can be increased by seeds or division of the tubers, the latter being preferable and quicker than the other; in fact, seeds are not produced with certainty.

THE YOUNG GARDENERS' DOMAIN.

GLADIOLUS THE BRIDE.

IT will be remembered that a few months ago I contributed cultural notes on these very desirable flowers. I cannot let their flowering season pass entirely without again calling attention to them. I need not say any more regarding their culture, as I presume the notes in question were read, and are perhaps remembered; suffice it to say that the method advised has been all that could be desired. The plants were treated precisely as I recommended, and brought into the conservatory as soon as they were presentable.

The first pot to flower was a 32-size, and contained ten bulbs, having twenty-three fine strong spikes of bloom, the majority of which needed no support. Arranged amongst Zonal Pelargoniums, Calceolarias, Spiræas, and other flowering plants, they are very charming, and for cutting—either for the dinner-table or any other purpose—are almost indispensable. One thing puzzles me about them, the tips of some of the leaves turning yellow. Can any young gardener tell us its cause and prevention? We have been very careful in watering the plants, and I do not think they have been checked in any way. I am of opinion that all bulbous plants require perfect drainage and careful watering, as the least stagnation in the soil very soon causes disease to attack them.—NIL DESPERANDUM.

[If our correspondent had given the date and page on which his former article appeared the present one would have been more complete.]

THE KITCHEN GARDEN.

I CANNOT permit the remarks of "A Young Scot," on page 488, June 9th, to pass unheeded. I do not think he has fairly grasped the meaning of my article on "The Kitchen Garden," page 378, April 28th. It was not meant for those who have had practical training in outdoor gardening; nor for them to take umbrage at. It was well meant, and written in a good spirit, for those young gardeners who, through perhaps no fault of their own, have been cast in a place where the opportunity never offered for them to practically learn the routine of the kitchen garden, and I know only too well there are many such. I had the hope that my article would be an incentive to them to make good use of such opportunities as presented themselves.

A few words as to my "contracted experience" and "intentions to hug the glass houses." Now, "A Young Scot," where can you find that I made any reference to myself or my capabilities? When and where have I stated I have had no practical experience in the kitchen garden? What I have so far contributed to the "Domain" has been the result of practical knowledge. Perhaps you may doubt it, but it is nevertheless true. I am not a believer in "preaching" from theory. My experience has so far been under men of "the old school," one of whom I have the pleasure of serving at present—a man who has the interest of his young men thoroughly at heart, and whose desire it is to see them excel in "all" branches of their calling, not of merely "hugging the glass houses."

As for what opportunities have presented themselves to me, it may gratify you to know I have learnt (practically) both levelling and land surveying, and, as you say, "Where there's a will there's a way," I hope I may one day use them to good stead. I have tried to answer your assumption reasonably. How would the women gardeners, in whom your faith, Mr. Scot, is strengthened, relish a few stiff days' work manure wheeling or trenching, with a change to boiler cleaning and joint picking and making, all of which have fallen to the lot of—SEMPER.

A VENTURE.

WE all know there is much to be gained from the skilled pens of our superiors if we will but study them with the interest and attention they demand. I also think that there is much to be gained if we follow "Semper's" advice on the kitchen garden in the issue of April 28th. My experience is that many young gardeners do neglect this most important department. Some have thought it of no consequence to study it, and a few, to speak plainly, regard useful outdoor work as beneath them. This a great mistake. If we wish to rise in our craft we must be practical men, and not centre all our thought and work on the glass department. The pleasure ground ought also to receive our attention when opportunity allows. There is much knowledge to be gained there on hardy flowering shrubs and plants, which, as my superior often tells me, are worthy of far more study than a number of our indoor plants. If we entered in our diaries the times of sowing, planting, flowering, and using different plants and crops, we could not fail to benefit by so doing in the end. I would advise all beginners who are "roughing it," as I did for three years, in the outside department, to try and appreciate the privilege of gaining experience in the foundation work of gardening.—MULTUM IN PARVO.

[Our correspondent has acted in accordance with his signature in crowding his writing into as little space as possible. He must do the reverse if he ventures again, and write on every alternate line of his foolscap, or the end of his efforts must of necessity be the W.P.B.]

A GOOD SINGER.

I HAVE little time for writing, but I cannot let "Young Scot's" contribution on page 488 pass entirely unnoticed. He has let us know two things—(1) That he does not lack modesty, and (2) That he is a good singer in praise of himself and his countrymen. I should like to inform him that the reputation of "Scotch gardeners being the best in world" is a thing of the past, and I do so without casting the slightest reproach on the many able men among them who are not given to boasting. I con-

sider a gardener must be able to produce and show on his employer's table:—First, good vegetables and salads; secondly, good fruit; and last but not least, he must be able to arrange gracefully and artistically cut flowers where and for whatever purpose they may be required. I think it is a fact that many Scotch gardeners send South for inside foremen, as being better trained in plant growing and decoration than their own young men, who are mostly brought up to outside work.—G. H.

[If the facts are as stated by "G. H." they must be regarded as showing in a practical way the intelligence and broadmindedness of Scottish gardeners. They have high ideals, and why should not they employ young men from the South as well as southern gardeners employ helpers from the North? Among the very best gardeners of our acquaintance are English, Irish, Scotch, and Welsh, who are not given to vain boasting. A "Young Scot" is answered, and discussion on the useless subject of estimating gardeners on geographical principles ended.]



FRUIT FORCING.

Peaches and Nectarines.—Early Forced Trees.—The trees cleared of their crops must now have plenty of air, ventilating to the fullest extent, removing the roof-lights as soon after midsummer as the wood becomes sufficiently firm. If the lights are not moveable, in addition to full ventilation, the border should be frequently damped and duly watered, so that no check is given likely to induce the premature ripening of the wood and foliage.

Keep the trees free from red spider by syringing occasionally, and if necessary apply an insecticide, for the foliage must be clean and healthy to insure its ripening naturally. Laterals encourage root action, but they must be stopped so as to prevent overcrowding, otherwise some lateral extension is desirable as a safeguard against the wood and foliage maturing too early.

All shoots that have borne fruit, and which are not required for extension, should be cut away to the growths originated from their base for next year's bearing, and any superfluous wood removed, alike to make space for growths which are left, and to allow of the free admission of light and air, also for the free action of water to cleanse the foliage from insect pests and dust.

Houses with the Fruit Ripening.—The trees started early in February have the fruit advanced for ripening, and when this commences the fruit must be kept dry. With a view to prolonging the season of fruit, fire heat may be discontinued, unless the weather be unusually cold, as it has been lately, admitting air freely by day and night.

Maintain genial but not excessive moisture at the roots to compensate for the lessened amount in the atmosphere consequent on the fruit ripening. Where it is not wished to retard the fruit, maintain a night temperature of 60° to 65°, and 70° to 75° by day. Free ventilation will enable the crop to swell freely and develop good flavoured fruit, allowing a rise of 10° to 15° from sun heat.

Keep water from the fruit, but the floors and borders should be damped, so as to afford a certain amount of moisture for the benefit of the foliage. Water at the roots must be supplied to both the inside and outside border as required, and a light mulching of rather short lumpy material will lessen the necessity for it, and encourage surface roots.

Trees Swelling the Fruit.—In houses that were started in March, or where the fruit is taking the last swelling after stoning, syringe vigorously to keep down red spider. Merely wetting the trees is no use, as it does not dislodge the pest, so that the mites remain and increase amazingly after the syringing is discontinued; this seriously impairs the quality of the fruit and disastrously affects the foliage, causing it to fall prematurely, whilst the buds for future bearing are impaired.

If the trees need support supply liquid manure, or water through a mulching of short manure, sprinkling a handful of fertilisers to a square yard before watering. Admit air early and freely with the rising temperature, and to insure the fruit swelling to a large size close early with abundance of atmospheric moisture, allowing the heat to rise to 85° or 90° or more afterwards.

Turn the fruit with its apex to the light, and draw the leaves aside or shorten them, so as to admit light and air to the fruit and thereby secure its even colouring and ripening. Keep the shoots well but not too tightly tied down, and pinch the laterals back to the lowest leaf, thinning out the growths where crowded, and remove superfluous shoots.

Gathering Peaches.—Great care is necessary in removing the fruit. The least pressure makes a mark and spoils its appearance. A piece of wadding should be held in the hand and the fruit removed by gentle pressure, then laid carefully in a padded basket.

The fruit intended for packing should be gathered before it is dead ripe, a matter requiring some judgment. If gathered too soon the fruit shrivels and has a sour or insipid flavour; therefore it must be full-sized and coloured with the ripening tint to about half the extent of the fruit, then it will be in prime condition in from twenty-four to forty-eight hours after picking.

Dead ripe fruits are somewhat insipid. This can be prevented by gathering as soon as they part freely from the trees. Allowing the fruit to fall is a bad practice, but it is a good plan to fix some netting a short distance from the trees and loop it to form pockets, so preventing the fruits that do fall damaging each other by contact. Morning is the best time to gather the fruit, and it should be placed in a room to cool and mature before being sent to table. In bright weather the trees should be looked over in the evening as well as in the morning for the removal of the ripe fruit.

Late Houses.—The fruit where crowded must be thinned to the number required for the crop, or a few more may be left than will be needed to allow for casualties in stoning. Syringe morning and afternoon in fine weather, but avoid syringing on dull days, and on mornings when moisture has been condensed and hangs on the leaf margins of vigorous trees. Admit air early and freely.

Mulch inside and outside borders with short manure, and supply water abundantly. Shoots not required for next year's crop, and those not needed for furnishing the trees, should be removed. Keep all laterals closely pinched, and cut away gross shoots. The shoots on young trees should be left about 15 inches apart for bearing next year, and if they are disposed to elongate beyond 18 inches they may be pinched to 12 or 15 inches, stopping the laterals at the first leaf, but extensions or main shoots should be allowed to grow their full length, provided they are evenly balanced and there is room. Avoid laying in the growths too closely. The branches should be a foot apart, and as evenly balanced as possible.

THE KITCHEN GARDEN.

Asparagus.—Not much Asparagus should be cut after the middle of June, and cutting ought to be wholly discontinued directly Peas become plentiful. Unless strong top growth is formed and taken good care of this summer, abundance of stout, succulent shoots will not be forthcoming next spring. If mulched during the winter with manure, and this allowed to remain on the beds, the soil ought to keep sufficiently moist all through the summer. Where the beds were not so mulched, they are liable to become injuriously dry, also heavier soils to crack. This should be prevented by mulching with strawy manure before top growth is too far advanced. A watering with liquid manure or a surfacing of salt washed in by water would be of great assistance now to exhausted beds. Keep down weeds, and thin out freely any small clustering shoots of Asparagus, as these give rise to straw-like produce for cutting next season.

Young Asparagus Plants.—In good, well-established beds the growths support and screen each other; but where they are thin, as on new beds, they are liable to be broken down by wind and rain directly they become top-heavy. Preserve them with the aid of branching Pea sticks, or in a neater manner by means of stakes and strips of raffia. They pay well for this treatment. Hoe among the rows occasionally, and mulch with littery manure, where it can be afforded. Seedlings, when large enough to handle, should be thinned out rather freely, and they will then attain to a good size this season. The thinnings, if wanted, may be pricked out in fresh lines during a showery time. During wet weather slugs do much harm to Asparagus, skinning the stems. They may be checked by frequent applications of soot and lime.

Beans.—Where the more delicately flavoured Kidney Beans are preferred to Scarlet Runners, seed of the Canadian Wonder, Negro Long-pod, or other favoured variety should be sown every fortnight or three weeks, as the plants are not continuous bearing, and the pods soon become tough. The climbing Kidney Beans are more continuous, and another sowing of these, affording the plants ample room to develop, may suffice. Runner Beans are also liable to fail early in hot and dry positions. This difficulty is partly met by watering heavily, also mulching, and by sowing more seed now.

Thinning.—Crowded rows of either dwarf or running Beans are the least profitable, and the first to fail. Thin out freely the early dwarf varieties to 6 inches apart, and the stronger, later varieties to 8 or 10 inches in the row. If extra fine pods are required, thin to 12 inches apart, and support the plants with a stake to each. Runner Beans may well be thinned to 12 inches apart. One strong plant to each stake will produce more pods than two or three plants which crowd and weaken each other. Brace the tall stakes together near the top, the wind doing the least injury to rows thus strengthened.

Topping.—Stakes may be of any desired length. If not more than 4 feet out of the ground top the running growths at that height. Runner Beans to be grown without stakes must not be permitted to form any running growth. They should be kept closely topped, and abundance of strong flower spikes will then be produced from the thickened stocky stems. Mulch the rows with litter, this answering the double purpose of conserving moisture in the ground and keeping the pods clean.

Borecole, Broccoli, Brussels Sprouts, etc.—Dry weather ought not to greatly interfere with the work of cropping the ground with green winter vegetables. Left standing in the seed bed or nursery bed the plants are liable to spoil each other before rain comes. On heavy soils, or where slugs abound, the planting is best done in dry weather. Well moisten both the seed or nursery beds and planting sites an hour or two before moving the plants, and the work can then be carried out without a severe check being given. Fix the plants firmly, water copiously, and apply more as often as is required. Plants drawn from seed beds may have their roots well covered with a puddle of clay, lime, soot, and water, with advantage. Thus treated they do not flag so much after planting, and are less liable to clubbing at the roots.

Peas.—Late and much appreciated dishes of tender Peas are more surely produced by tall or vigorous growing varieties of the Ne Plus Ultra type, sown about the middle of June, than by either second early or other weakly growers, which are sometimes recommended to be sown now. Mildew is the greatest enemy to late Peas, and Ne Plus Ultra resists this disease remarkably well. Sow on deeply dug, well-manured ground, thinly, in wide drills, and cover with not less than 3 inches of soil. The seed would germinate more strongly and evenly if the drills were moistened before sowing the seed, covering with fine drier soil. Mulch the ground about the rows early.

Tomatoes under Glass.—Where only a few plants are grown, disease, notably Cladosporium, is less likely to be troublesome than where many are cultivated in houses by themselves. A warm moisture-laden atmosphere is most favourable to the propagation of this much-to-be-dreaded disease. This can only be prevented by ventilating early and never wholly closing the houses, a gentle heat in the hot-water pipes further aiding in maintaining the desirable circulation of dry air. A strong sulphurous heat with a dry atmosphere will kill the disease germs. Make the sulphur-coated pipes hot on a bright sunny day, and admit enough top air to prevent burning.

Plants already furnished with two or three lower clusters of fruit are liable to fail to set fruit on the later bunches of flowers during hot weather, apparently owing to exhaustion. They should receive abundance of water and liquid manure, and if this does not have the desired effect, very lightly spraying the roof with thin lime water will probably check the premature dropping of flowers. Topping weakly leaders will also be an aid to setting. Where young plants are growing somewhat close together remove those portions of the leaves which overhang or shade the flowers or swelling fruit, but avoid wholesale defoliation. Cutting away the greater portion of the leaves is a senseless but too common proceeding. It has a paralysing effect upon the root growth and the fruit, with the result that the fruit is defective in size and poor in quality.

THE BEE-KEEPER.

WEATHER AND HONEY PRODUCTION.

THE sudden rise in the temperature on the 8th inst., when the thermometer in the shade registered 76°, was beneficial to the bees and as this warm wave of heat continued over the three following days a great improvement was observed in all the stocks. It is several years since such perfect bee weather has been observed in this district during the first fortnight of June, and what a wealth of flowers there are in all directions. The honey-producing flowers, too, are in profusion. The Hawthorns were still a mass of bloom, on which the bees delight to work. A quantity of honey obtained from this source was stored during that time. The strong perfume arising from it was perceptible at some distance from the hives. The honey is not of high grade, being somewhat strong in flavour and not of good colour.

Field Beans, of which there are more than usual being grown this season, are now in perfection, and it is not often they are seen of such robust growth as at the present time. It is well known to all bee-keepers who study the habits of their bees how partial they are to the common field Beans, and how they will ignore almost all other flowers that may be in bloom at that time in their favour. The honey too is of exquisite flavour, preferred by some epicures to that obtained from White Clover. It has a somewhat strong aroma, though the honey does not crystallise as quickly as that obtained from some other flowers. It is brown in colour, and for that reason does not find such a ready sale amongst the general public as do the lighter samples; but anyone who has once tested this honey will not be slow to discover its good qualities.

From the above it will be seen how promising the honey prospects are, although dull weather has again set in; the barometer is high, but as the wind is in the east very little honey will be obtained until there is another change in the weather. Perhaps before many hours this may take place, but in the meantime there will be an increase of thousands of young bees daily, which will in due course be prepared to take their part in storing a surplus.

PREVENTION OF SWARMING.

One of the most important, and to some bee-keepers the most difficult, part of bee-keeping is the prevention of swarming. When bees are kept in straw skeps, and the swarms are placed in the same receptacles, it is usual for the bee-keeper to speak of his success or failure according to the number of swarms he has had. But with the bees in the modern frame hive, where they are perfectly under control, if managed on rational lines, they are prevented from swarming as much as possible, and thus a much greater surplus is stored than would be the case if they were allowed to swarm at will.

What is more annoying to the bee-keeper when a spell of fine weather sets in, and honey is abundant, to find his bees will not

work because they are influenced by the swarming mania? They may be returned to the parent hive after all the queen cells have been cut out, but on the first favourable opportunity they will swarm again to the discomfiture of the bee-keeper. When bees are in this state but little honey will be stored, and as much valuable time will be lost in manipulating them it is better to place the swarm in a separate hive and treat the original stock as occasion may require, either by raising young queens or cutting out all queen cells but one. If the former is decided on it places numerous young queens within reach of the bee-keeper which has been matured in a strong colony.

That swarming may be prevented we have proved on many occasions. During the spell of hot weather mentioned above, when stray swarms were heard of in all directions, not a single swarm came off in our apiary numbering nearly forty colonies.

SYSTEM IN BEE-KEEPING.

We leave nothing to chance in bee management, but make arrangements beforehand as to the treatment of the various stocks, and if possible keep a few days in advance of the bees' requirements. It is not at all a difficult matter when their needs are properly understood.

The three chief points to be observed in the prevention of swarming is the increase of room when the bees require it, either by enlarging the brood nest, or by giving extra space in the supers, timely ventilation and shading. Ventilation should always be given at the bottom of the hive, not at the top, as we have often seen bee-keepers who, for the want of knowing better, have removed the roof and some of the coverings from the super in the vain hope of cooling the interior of the hive. Bees treated in this manner will often refuse to work during the middle of the day, when a high temperature prevails.

In providing bottom ventilation to hives, it is necessary to have loose floor boards, unless these have some open spaces, which are covered with corrugated zinc. We, however, prefer not to have the hive attached to the floor board. Prevention of swarming is then very much simplified. The front of the hive is wedged up as much as is deemed necessary. This will allow free entrance for the bees, and abundance of ventilation.

The hives ought to be shaded during bright days, and should the weather be dull for a few days the shading may be removed, so as to allow of a free circulation of air round the hives. The above, and timely attention to small details, will prevent swarming in a marked degree. It is only by having colonies strong that a surplus may be obtained, and the bees can only be kept in their hives when in this condition by giving them the treatment they require.—AN ENGLISH BEE-KEEPER.



All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8. Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Spotted Melon Leaves (*H. D.*).—The specimens shall be carefully examined, and a reply published as early as possible.

Diseased Broccoli Leaves (*K., Dublin*).—The fungus-infested leaves are under examination by Mr. Abbey, and an article on the subject of Brassica infestation will appear in an early issue.

Apple Leaves Blackened and Shoots Killed (*W. S.*).—The black on the leaves is the early form of the scab fungus, *Fusicladium dendriticum*, and the dead points of the shoots, where there would have been Apples under ordinary circumstances, have been destroyed by some caterpillar, apparently by the lesser Apple leaf roller moth, *Teras minuta*, but the fungus has also affected some of the young shoots to an alarming extent. You may spray the trees with a solution of sulphide of potassium, 1 oz. to 3 gallons of water, or use 1 oz. to 10 gallons for syringing, doing this in the lightest possible manner with a fine-rose syringe. Repeat at intervals of about ten days twice. The caterpillars had departed, being probably in the chrysalis state. The treatment with the sulphide of potassium solution will probably act as a deterrent.

Angle of Glazed Roofs—Pipes for Heating (*Tyro*).—The angle is very little regarded by practical men. We have, as have many cultivators, obtained equally good results with the glass at an angle of 35° as with it at 45°. For the Cucumbers on a south aspect we should have the roof at an angle of 45° for winter fruit, and certainly not more than 35° for Vines. If the Cucumber houses were span-roof, and ends north and south, we should not have the angle of elevation more than 35°. The piping required is about twice as much for Cucumbers as for Vines, as the first require bottom heat, while the Vines do not. We have used 30 feet of 4-inch piping per 1000 cubic feet of air for top heat to Cucumbers, and 20 feet for Vines not required to produce ripe fruit before the end of May. These figures apply to comparatively small houses, which require in proportion more piping than larger structures. It is better to have too much than too little heating surface.

Spiders (*D. R.*).—The spiders, of which you forwarded a "nest," are not injurious to vegetation, but amongst the best friends of the gardener, by preying on the insects feeding in some form or other on his crops. The species is the so-called "garden spider" (*Epeira diademata*), which, when newly hatched from the eggs in the spring, collectively spin a small irregular mass of almost invisible lines, in the midst of which the young spiders cluster together, forming themselves into a little ball about the size of a Cherry stone. This hangs, apparently, in mid-air, and when the threads forming the nest are disturbed, in an instant the solid little ball seems to be turned for a moment into smoke, so minute are the animals, so rapid their motions, and so almost invisible the means of their dispersion. The "nest" contains 600 to 800 of the bright living atoms, and after a few seconds, if the disturbance is not repeated, the little creatures begin to subside again into a cluster, but the 6000 legs or more, and the 600 or 800 pairs of poison fangs, require some time in packing so as to become resolved into a ball again. You appear to have seen this phenomena, but at a more advanced stage, the spiders being nearly dispersing.

Morels (*T. Moss*).—What you describe as a "beehive-shaped honeycomb sort of a thing," and of which you send a sample, is a medium-sized specimen of the edible fungus *Morchella esculenta*, popularly known as the Morel. They usually grow in colonies in partially shaded places in woods, and are said to be the most plentiful where the undergrowth has been burnt on the ground. They are preferred by many persons to Mushrooms, and are cooked in the same way. They are also dried and used by cooks for flavouring. We have not known them to be cultivated. The nearest approach to what may be termed cultivation we recently observed at Chiswick. The superintendent, having a number of rotten Apples at the end of the season, had them spread on a plot of land and dug in, with the object of raising seedlings for stocks. Several of these in due time appeared, but in addition great clusters of Morels. We have seen thousands growing in woods, but never before seen a bed of Morels in a garden. It is a curious occurrence, and we shall await future developments, if any. Funguses are freaksome things. Some of the finest Mushrooms we have seen were grown, and others are growing now, by the side of a path in a London suburban garden.

Pansy Roots Diseased (*J. H.*).—We did not find the "tiny white louse," which appears to have been our old acquaintance the "running" springtail, *Lipura fimetaria*, so common on decaying vegetable matter, or damp earth containing it, throughout the year. The specimens were very dry, and the springtails soon collapse under those conditions, so that may account for our not discovering the active creature. The stems of the Pansy plants were quite dead from the base to level with the surface of the soil, and that accounts for their going off. In the dead part we found the fungus called *Pleospora herbarum*, but in the macrospore stage—namely, *Macrosporium commune*, this producing a sort of dry rot in vegetable tissues. We also found the self-same section to give, under treatment with an alcoholic solution, eelworm, *Tylenchus devastatrix*, and this we consider to be the chief cause of the failure of the plants, though the fungus may have "assisted" in the operation. Why not treat the plants with a solution of Little's soluble phenyle, 1 fluid oz. to 6½ gallons of water, applying as in an ordinary watering? The eelworms will then probably take their departure, and the solution will profit the plants. It would be advisable to keep it from the flowers and young foliage. We do not know what you can now use more advantageously, applying it to infested plants at the rate of a wineglassful to 3 gallons of water. A solution of 2 ozs. kainit and 1 oz. nitrate of soda to 3 gallons of water acts well on the eelworm, applying as in watering, but not over the flowers and young foliage. For the fungus we advise a dressing of quicklime, using at the rate of 10 stones per rod, or 10 tons per acre, in the usual manner in autumn, letting it lie on the surface a short time after slaking, and spreading before digging in. This means fresh ground for the plants, using the lime as a preventive, and also dressing the cleared ground so as to disinfect it.

Peaches Dropping (*D. H.*).—The magnificent leaves have assuredly had the sap cut off from them, and we think by the brown rot fungus, *Monilia fructigena*, though we find no trace of it on the shoots, but it was on the fruits. The trees are simply too vigorous, the soil being both too moist and too rich. We should lift the trees in the autumn, doing this very carefully, as a severe check would probably cause the wood to die back, the roots very likely being long and bare of fibres. We do not know what more you can do, unless, if any gumming appears, cut off the shoots affected and burn them. Keeping the border as dry as may be without prejudice to the foliage would be of advantage, but only lifting can prove of material benefit, mixing some lime rubbish with the compost and making this firm about the roots.

Tomatoes for Market (*A Beginner*).—There is no teaching equal to that of experience. We doubt if any grower, no matter how successful he may be, is equal to naming any variety of Tomato as the best for all other growers, and those who have had the most experience are the least likely to be so dogmatic. As a rule, medium-sized, smooth, well-coloured fruits are the most in demand and realise the highest prices. One grower mainly relies on *Chemin Rouge*, another on *Comet*, a third on *Duke of York*, a fourth on *Sutton's Abundance*, a fifth on *Frogmore Selected*, and so on, and they grow these because they give satisfaction. Most growers try several varieties, and choose such for extensive culture that succeed the best with them and their methods. It does not follow that because the smooth fruits predominate in the market, and the best of them realise top prices, that corrugated varieties do not pay for growing. We had recently an opportunity of seeing that all of these are not despised. Mr. Bide of Farnham, after trying many varieties, has settled down to his *Improved Conqueror*, because he obtains a much greater weight from the plants than he could obtain from any of the smooth fruited, this more than compensating him for the slight reduction in price over first-class smooth samples. On this point, however, he had not much cause to complain, for he had a return of 9d. per lb. for large early consignments to London in May. The earlier and heavier the crops, the more profitable they are, whether the fruits are smooth or more or less ribbed, but they should be bright and tempting in appearance.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*R. W.*).—The specimens you send are florists' varieties, obtained by crossing such hardy American species as *A. calendulacea nudiflora*, *A. speciosa*, and others of similarly rich colours. The varieties resulting from such crosses are very numerous, and many resemble each other so closely that they can only be accurately named by comparison in a large collection. If you have dealings with a nurseryman who grows these shrubs extensively he might be able to give you the names of such as you enclose. We can only say that No. 1 resembles *A. nudiflora coccinea*, and 2 *A. calendulacea*. (*Picksley*).—The flowers of the four Sun Roses are closed. They are *Helianthemums*. 1, perhaps *H. cupreum*; 2, *H. roseum*; 3, *H. stramineum*; 5, *H. angustifolium*; 4, is *Limnanthes Douglasii*; 5, *Cerastium tomentosum*. The nearly obscure name on the label is *Acalypha musaica*. (*J. T.*).—1, (*Eriogonum taraxacifolia*); 2, *Muscari comosum* var. *monstrosum*; 3, *Hemerocallis lily* (Day Lily); 4, probably a young frond of *Adiantum trapeziforme*. (*W. H.*).—1, *Viburnum plicatum*; 2, *Buxus sempervirens*.

TRADE CATALOGUES RECEIVED.

William Bull, Chelsea.—*New and Rare Plants*.

F. Cooper, 30, Manners Street, Wellington.—*Trees, Shrubs, and Plants*.

Ant. Roozen & Son, Haarlem.—*Dutch and Cape Bulbs*.

W. Dunkan Tucker, Tottenham.—*Horticultural Structures*.

W. Wells, Earlswood.—*New and Select Chrysanthemums*.

COVENT GARDEN MARKET.—JUNE 22ND.

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Par-ley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzonera, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mushrooms, lb. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	0 0	to 0 0	Grapes, lb. ...	1 6	to 3 0
Cobs ...	0 0	0 0	Lemons, case ...	11 0	14 0
Filberts, 100 lbs. ...	0 0	0 0	St. Michael's Pines, each	2 6	5 0
Gooseberries, $\frac{1}{2}$ sieve ...	1 6	2 0	Strawberries ...	1 6	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Fuchsia ...	6 0	to 9 0
Aspidistra, doz. ...	18 0	36 0	Heliotrope, doz. ...	6 0	9 0
Aspidistra, specimen ...	5 0	10 6	Hydrangea, doz. ...	8 0	10 0
Calceolaria, doz. ...	6 0	9 0	Lilium Harrisii, doz. ...	12 0	18 0
Coleus, doz. ...	4 0	6 0	Lobelia, doz. ...	4 0	6 0
Dracæna, var., doz. ...	12 0	30 0	Lycopodiums, doz. ...	3 0	4 0
Dracæna viridis, doz. ...	9 0	18 0	Marguerite Daisy, doz. ...	6 0	9 0
Erica Cavendishi ...	18 0	30 0	Mignonette, doz. ...	4 0	6 0
„ various, doz. ...	12 0	24 0	Musk, doz. ...	2 0	6 0
Euonymus, var., doz. ...	6 0	18 0	Myrtles, doz. ...	6 0	9 0
Evergreens, var., doz. ...	4 0	18 0	Palms, in var., each ...	1 0	15 0
Ferns, var., doz. ...	4 0	18 0	„ specimens ...	21 0	63 0
„ small, 100 ...	4 0	8 0	Pelargoniums, scarlet, doz. ...	4 0	6 0
Ficus elastica, each ...	1 0	7 0	„ „ ...	9 0	15 0
Foliage plants, var., each	1 0	5 0	Rhodanthé, doz. ...	5 0	6 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Anemone, doz. bnchs. ...	2 0	to 4 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Arum Lilies, 12 blooms ...	3 0	4 0	Myosotis, doz. bnchs. ...	1 0	2 0
Asparagus, Fern, bunch ...	2 0	4 0	Narciss, doz. bnchs. ...	1 0	3 0
Azalea, doz. sprays ...	0 6	0 9	Orchids, var., doz. blooms	1 6	9 0
Bluebells, doz. bnchs. ...	1 0	2 0	Pelargoniums, doz. bnchs. ...	4 0	6 0
Bouvardias, bunch ...	0 6	0 9	Polyanthus, doz. bnchs. ...	1 0	1 6
Carnations, 12 blooms ...	1 0	3 0	Roses (indoor), doz. ...	0 6	1 6
Eucharis, doz. ...	3 0	4 0	„ Red, doz. ...	1 0	3 0
Gardenias, doz. ...	1 0	3 0	„ Tea, white, doz. ...	1 0	2 0
Geranium, scarlet, doz. bnchs. ...	4 0	6 0	„ Yellow, doz. (Perles)	1 0	2 0
Iris, doz. bnchs. ...	4 0	6 0	„ Safrano (English) doz.	1 0	2 0
Lilac (French), bunch ...	3 6	4 0	„ Pink, doz. ...	3 0	5 0
Lilium longiflorum, 12 blms	3 0	4 0	„ Moss, per bunch ...	0 9	1 0
Lily of the Valley, 12 sprays	0 6	1 0	Smilax, bunch ...	2 0	3 0
Maidenhair Fern, doz. bnchs. ...	4 0	8 0	Tulips, doz. bnchs. ...	2 0	4 0
Marguerites, doz. bnchs. ...	1 6	2 6	Violets, Parme (French), bunch ...	2 6	3 6
			Wallflowers, doz. bnchs. ...	1 0	3 0



OUR DEVON AND CORNISH NEIGHBOURS.

FOR two years we have followed the footsteps of the British dairy farmer when on his annual outing, and any remarks we have made have had more reference to dairy work proper than to general agriculture. This year we fancy fresh ground has been broken, and much of interest has been seen outside milk and butter production. Devon and Cornwall are charming counties, and present many new features. Things appear to be done on a grand scale; of course, the farms chosen for inspection were picked ones, and everything that could render the visit a charming one was done.

It is pleasant to hear of luxuriant Wheat crops with promising Barley and Oats, for in the northern latitudes the two latter are doing but badly—cold, wet weather are not conducive to rapid growth. The mowing Clovers and hay fields, too, had made a good start, and no doubt with genial heat will produce immense crops.

The dairy systems of Devon and Cornwall are unique, and to some of us may appear old-fashioned, but as the price realised is so good (above London) the makers evidently know what they are about. Who has not enjoyed clotted cream and the sweet fresh butter? This butter is produced, not by machinery, but simply by the hand, after the new milk has been scalded.

Up the river Tamer was found the farm of Mr. Coryton. A farm that produced 14,801 quarts of milk in a week must be fairly given over to dairy work, Plymouth, Devonport, and Stonehouse being the markets. The cows kept here are Shorthorns. At St. Austell's the train was left, and a drive through lovely country brought the visitors to Mr. Tremayne's estate at Heligan, where the dairy herd is formed

of the Jersey breed. The cream from this milk is about 22 per cent. A fair yield, is it not? Mr. Hosken of Hayle divides his attention between his dairy cows (Shorthorn crossed with Cornish part and half-bred Jerseys), his herd of pure Shorthorns, his Lincoln sheep, and his poultry and rabbit industry. The rabbits find their home on 300 acres of grass, their ultimate destination being Birmingham and Sheffield. Over 2000 head of poultry are kept. Six incubators are used, and Mr. Hosken has found that buff Orpingtons answer his purpose the best (these fowls are also known as Lincolnshire buffs). Our experience of them is that they arrive early at maturity, and are good layers, with healthy constitutions.

Another large farm of 925 acres was visited, the home of Mr. Vosper. 100 acres for corn, 120 roots and Potatoes, the rest pasture and forage crops. The bill for feeding stuffs is £3000 per annum, and we presume also that the malt made on the premises is of no small money value. 200 South Devon cows, thirty cart horses, 300 ewes, and large white Yorkshire pigs, with innumerable poultry form the live stock. The labour bill, too, would make some of us open our eyes on Saturday night with fifty men to pay.

The most interesting thing about the Cornish sight-seeing was the Potato culture, which we may term "first earlies." On a cliff facing the south, near Penzance, digging began during the last week of April, when the price was £20 per ton; the yield is about 3 or 4 tons per acre, but the price soon drops a few pounds. This year Cornish Potatoes were in the market before Jerseys. The highest rent appears to be £9 to £6 per acre for land in the neighbourhood of Gulvare, whereas some very early near St. Ives makes as much as £20; but in one case, as the occupier netted £110 from one acre, he would not have great cause for grumbling. After the Potatoes are dug, the land is planted with Broccoli—in one case this has been done twenty-seven years in succession.

The fruit and vegetable farm of Mr. Frank Craze, Polgrain, Lelant, is most interesting. Of 112 acres, 30 acres are planted with fruit, 60 with Broccoli, and 17 acres with early Potatoes; these are followed by transplanted Mangolds, which are pulled in October, and Radishes sown for pulling in February. That land does not lie idle long—three crops in twelve months. The June Potatoes average from 4 to 8 tons per acre. On the fruit we should like to write, but refrain; it might be trenching on another's preserves.

The carriage of new Potatoes from Penzance to London is 35s. per ton; to Liverpool or Manchester 38s., and salesmen's commission with other expenses will bring the bill up to about 50s. There is a heavy outlay for tillage, as might be expected. It is not in England we find land productive when only tickled with the hoe. A mixture of farmyard manure, seaweed, and white sand is applied at the rate of 160 small loads per acre, and to that is added 1½ ton of nitrate of soda, or possibly instead 1 ton sulphate of ammonia. The Cornish acre is a trifle larger than the usual 4 rood plot. The varieties grown are Myatt's Ashleaf and Snowdrop. The rows are only 12 inches apart, and the seed set from 6 to 8 inches asunder. Of course horse-hoeing is out of the question, and so is earthing up as we understand the process. As in the Vale of Avelon, no frost or snow visits this favoured region, or practically none.

After the Potatoes are marketed then comes the second crop of the year—Broccoli Veitch's Autumn Giant. A little hoeing prepares the land, and no more manure is requisite. The carriage of Broccoli to London is 2s. 10d. per crate, each crate weighing 1½ cwt. The old story repeats itself. Man can plough, and sow and harvest, but unless he is backed up as it were by genial warmth, his best efforts but spell failure. Before we come to the conclusion that the Cornish farmer is reaping golden harvests we should remember his rent, his tillage bills, and all his hand labour, of which the Potato crop entails an immense amount, and some of it very heavy labour. Taxes, added to a rental of £9 per acre, take a good deal of gilt off the gingerbread, and that is only the initial expense. The price of the commodity had need be good, and we expect our Cornish friends have to meet light crops as well as farmers have, who do their best in outlay and skill in more northerly counties.

WORK ON THE HOME FARM.

A fine week has helped much to hurry up the work which was rapidly getting into arrears. Weeds of all descriptions have withered quickly under the influence of sun and drying winds, and the last order of twitch has been raked up and burnt under very favourable conditions. Midseason Potatoes are ready for earthing; a few late ones planted quite at the end of April are making rapid growth and will be ready as soon as we are ready for them.

Mangolds have grown well and are very promising—in fact, more so than we have seen for a long time. They have come to the hoe very quickly, and we have to make a strong effort to keep pace with them. What with side-hoeing and then striking and singling, the Mangold crop is rather exacting as to labour at a time when work is very plentiful. Doubtless this is the reason why many farmers fight a little shy of Mangolds.

Barleys have much improved, but there was so much room for improvement that even yet the prospect is not encouraging. There is more promise of a bulky crop, but there is very great unevenness, and this is sure to tell a tale in the sample bag.

Wheats look well, and the ears will soon be visible, but there are many complaints of the Oat crop, which is repeating last year's tendency to becoming blind (locally spoken of as "segging").

Turnips have come up quickly and well, and in some parts are growing quite as fast as the grower can wish, whilst in others the fly is playing greater havoc with the young plant than the oldest inhabitant can remember. Serious damage from the fly we have found to result from three causes—bad cultivation, poverty of the soil, or niggardliness as regards seed. Fly seldom or never attacks a healthy plant—i.e., a plant properly grown in well cultivated soil in a good state of fertility; but if there is a difficulty, owing to adverse weather conditions, in attaining a good Turnip tilth, and if the farmer knows from his own experience that there is a doubt about the result, then the best thing to do is to sow more seed, so as to provide for non-germination and fly attack as well. It is more expensive in seed as well as singling, but we have never missed a Turnip crop yet (except the diamond-back moth year), thinking that 9d. per acre for extra seed is well spent as an insurance.

MAGNIFICENT WHEAT PROSPECT.—Under this heading the "American Agriculturist" estimates an area of 43,500,000 acres, a remarkable increase over last year, a splendid condition of crop, and a brilliant outlook. It goes on to say, "Of course the price of Wheat for the past year has made it a foregone conclusion that the acreage this season would be large, but the "Agriculturist" and other of its more thoughtful contemporaries warned growers of the danger of too great a rush toward Wheat. A total Wheat acreage of 43,519,000 acres is a radical disturbance of the proper balance of our annual crop distribution, and there is grave danger of such a surplus of Wheat this year as was secured in 1891. The fact that Wheat supplies the world over are small, and that foreign crops only show promise of a moderate increase over last year, may offset the apparent mistake which our own large acreage seems likely to prove." British agriculturists will hope it may be so.

OUR LETTER BOX.

Poultry (Amateur).—You are right in your interpretation. The method, we are informed, is to some extent practised in France, but we are unaware of such custom in England. Perhaps you would like to write to the Editor of "Poultry," 3, Windsor Road, Church End, Finchley, London, N. The paper only costs 1d.

Preserving Eggs (Mrs. Mason).—Mr. De-la-Bere's method, about which you inquire, has been described by that gentleman as follows:—The new method is to wrap each egg the day it is laid in a small square of newspaper, and pack these eggs side by side in a box, layer upon layer until it is full. After the lid is fastened down it must firstly be stored in a dry cool place, and secondly, be turned upside down at least three or four times a week. This simple process of turning will preserve eggs perfectly fresh for 12 or even 18 months. The following were our comments at the time:—Enveloping eggs in newspaper is not by any means a new method of preservation. We have before heard of and adopted this plan in preserving eggs for eating purposes. The newspaper, in that it excludes the passage of air through the porous shell, retards decomposition and destruction of the germ. Similarly ice is prevented from melting rapidly in hot weather by being well wrapped in newspapers. Another proof of the non-conduction of heat by paper is the fact that if a newspaper be sandwiched between two blankets on a cold night radiation of heat will be much retarded, and the sleeper kept much warmer. Such methods for the preservation of eggs as greasing with butter or immersing in a solution of lime illustrate the same principle of excluding air, but unfortunately eggs thus preserved are of no use for hatching purposes, since the chicks in order to hatch alive must have a supply of oxygen, which is impossible if the pores of the shell are choked with grease or lime. We think, however, that our correspondent attaches undue importance to constant turning, for movement is likely to damage the vitality of the germinal spot, and believe that if the turning of the eggs were omitted quite as good, if not better, results would ensue, provided the eggs were carefully wrapped in paper as soon as possible after being laid.

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Journal of Horticulture.

THURSDAY, JUNE 30, 1898.

THE JOURNAL OF HORTICULTURE can be obtained from the Office, 12, Mitre Court Chambers, Fleet St. London, post free for a Quarter, 3/9. Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.

IN THE GARDEN IN SUMMER.

THE garden is gay with its summer bravery. It has put off its delicate colouring of early spring and the brighter hues of the later time, and is now full of the pomp of the season. The great Pæonies are resplendent with colour; big Oriental Poppies flaunt in the summer sun, with many humbler but not less beautiful sisters of the race; Irises, in many beautiful colours, are in flower; and we echo and re-echo the words of Longfellow, and say:—

"O flower of song, bloom on, and make for ever
The world more fair and sweet."

The queenly Rose gladdens us in the border and on the wall, and Lilies fair open their milk-white or crimson flowers to delight us. There is one fly in the pot of ointment among the Lilies, and that is the old yellow *L. pyrenaicum*, whose turned-back flowers emit so strong an odour as to be far from pleasant, especially on a calm evening, when we would loiter in the garden and enjoy the beauty and fragrance of its varied occupants. Sweet Pinks strive to drown the odour of the Pyrenean Lily by their delicious perfume, and the earlier Carnations join in the contest, while the scent of the Rose—ever unique—is welcomed as we pass the bushes. There are Meadow Sweets, too, pleasant enough out of doors, but sickly when in the room, though we seek to make it more pleasant by a diffusion of the old sweet Balm and odorous Thyme.

There is much fragrance in the garden—some of it sweet and soft, and all-sufficing in itself; but some needing to be toned down by leaves and flowers less marked in their perfumes. Not altogether scentless, but not pleasantly so, are the Pyrethrums, gloriously beautiful with tasselled heads, or Daisy-like in their beauty as in the single forms; while the tall Delphiniums, which have begun to open their spikes of blue, are among our scentless flowers. Creeping, or rather clambering, over trees and trellises are honey-odoured Honey-suckles—beautiful, and sweet as beautiful. Would that we made more use of them, to the gain of our gardens in grace and in fragrance.

No. 2596.—VOL. XCVIII., OLD SERIES.

There are "Daisy-Bushes," Geraniums, Violas, Pansies, Dictamnuses, Lychnises, Asphodels; there are early Campanulas, Lupines, Marigolds, Cytisuses, Saxifrages, and Stonecrops; while the House-leeks begin to thrust up their great fleshy flower stems. Flowers graceful, flowers sweet, flowers quaint, flowers stately—all have been called into birth by the heat of midsummer days; but we cannot stay now to tell of all at length.

There is something pleasing in the diminutive attached to the names of some of our plants. "Gentianella" is familiar to the most of us, and sounds softer than the shorter "Gentian." As I look out of the window—for much-wished-for rain has come—a plant of the white Fraxinella, *Dictamnus albus*, presents itself to view. To the uninitiated it is well named, so far as its foliage is concerned, "Fraxinella," or "little Ash," but those who know it well can scarce recognise the appropriateness of the name. We used to consider the purple Fraxinella, usually known as *D. Fraxinella*, the type, but it now appears that we have been wrong, and that the white form is the type plant, and that it is to be known as *D. albus*, and the purple variety by the paradoxical term of *D. albus purpureus*. The older writers cared little for these things, and some of them knew the plant as the Bastard Dittany, a name now apparently obsolete. While the purple form is much inferior to the fine variety now known as *D. caucasicus*, the white-flowered plant is almost indispensable. It is, too, a flower which stands drought well, always provided that it is established in good, strong soil, which is really necessary if truly effective plants are desired.

The luminous vapour exhaled by the *Dictamnus* has often excited much curiosity. That it is inflammable has been doubted, and some years ago an amateur who wrote about it in one of the gardening papers thought it necessary to support his statements by appending a certificate of their truth from the provost of Auchtermuchty, a Scottish town unpronounceable by the tongue of those of southern birth. A pretty plant is *Dictamnus albus* with its long spikes of ivory-white flowers of distinct form.

In the writer's all too brief college days he was often galled by the apparently purposeless repetition and reiteration of certain simple things which, however, when examination times came on, were found of almost incalculable value. So it is in writing on flowers. There are plants of which we have to speak again and again before their worth becomes recognised. One is almost afraid to say how often the *Helianthemums* or Sun Roses have been mentioned, and now that we are in the sunny months they once more put in a claim. Many who cannot grow the *Cistuses* can grow the *Helianthemums*, and although they cannot replace the former, they can be grown on sunny rockwork or dry mounds or banks with much advantage. Fugacious though they are, they are very beautiful, and a packet of seed will produce many attractive varieties which would delight almost anyone by their flowers. Less fleeting in their beauty, if heavier-looking, are the double forms. Of these nearly all are worth securing. There are double scarlet, double orange, double yellow, double cream, double white, and one or two others of various shades. They are propagated by cuttings, and in some positions look very beautiful indeed. On one rockery the writer has a patch of the double scarlet *Helianthemum*, which was planted beside the single white *Rosa pyrenaica*. The latter, as is its wont, disdains being confined to an allotted space and rambles among the stones, with the result that the scarlet flowers of the Sun Rose mingle prettily with the leaves and blooms of the Pyrenean Rose, making a charming combination.

There is a dainty little Pink in this garden of which I thought of writing a year ago. My plant was but small, and I delayed until it had attained its true character. Recently I saw a fine plant at Glasnevin Royal Botanical Gardens, and one feels that so unpretending a flower deserves some commendation. It must be premised that the name, *Dianthus suavis*, is applied by one or two of my books to a Pink which differs in some respects from that grown at Glasnevin, and here by the name. The Pink of which I speak has small white flowers, fragrant, and produced singly on rather long

stems. The foliage is small, dense, and grass-like in its general appearance. On rockwork a good plant looks as if it had hanging from it a number of silver spangles, when viewed from a little distance. It is a dainty single-flowered Pink, which should be sought after for the rock garden.

The time of summer shows has come, and pressure on the Journal's space is correspondingly great. Close one must with regretful looks at the sweet and beautiful flowers around.—S. ARNOTT.

DEFOLIATING TOMATOES.

THIS is a matter which has been much discussed, and about it there seem to be many conflicting opinions. At one time it was the usual custom to shorten back the majority of the main leaves in a rather reckless manner. This led some prominent writers to attack the practice mercilessly, and to declare that it was a barbarous proceeding to shorten the leaves of Tomatoes, and, moreover, totally at variance with all scientific teaching. Such bold assertions made the timid ones waver, and although they might be convinced by their own practice that a certain amount of leaf-shortening was advantageous, few ventured to express their opinions in the horticultural press. At the present time the matter stands in this unsatisfactory condition—that, though the majority of writers condemn the shortening of Tomato leaves, I suspect that nearly all of them practise it in some degree.

It is one of those matters which ought to be modified according to circumstances. What may be the best practice in one instance may be quite unsuited to another set of conditions. If I wanted to grow some extra large fruit of the Perfection type for exhibition purposes, I should set the plants 2 feet apart, remove all side shoots, and not shorten a single leaf; there is then no difficulty in securing splendid fruits. For ordinary purposes, however, very large Tomatoes are not desirable either for supplying the markets or private families; medium-sized smooth fruits of such fine varieties as Frogmore Prolific, Ham Green, and Challenger are invariably preferred. The point the cultivator has therefore to aim at is to secure as large a crop of fruits as possible of the right size in a given space—not undersized ones, but fully grown specimens of their respective varieties, being as far as possible without spot or blemish.

The best way to accomplish this object is, according to my experience, to plant rather closely, from 13 to 15 inches apart, and slightly shorten every leaf. Fortunately the leaf of a Tomato plant is so constructed as to lend itself to material reduction without showing any injurious results when the work is performed in an intelligent manner—i.e., done piecemeal, as opposed to the practice of severely shortening a number of leaves at one time. The plan I adopt is to shorten the leaves regularly as growth is made, rather than allow them to grow luxuriantly for a time, and then have a grand "slaughtering day." From some of them I remove one joint, from others two whenever I find the growth becomes unduly crowded; and in all instances I make a point of having the flowers fully exposed, as without full exposure perfect fertilisation is not effected. As the fruit begins to ripen at the base of the plant the leaves commence turning yellow at that point; as fast as they do so I remove them, to hasten the ripening of the fruit by giving full exposure.

In working on such lines I maintain that we so manipulate the plant as to secure the greatest possible weight of good fruit in a given space, and I have yet to learn that there is anything barbarous about the practice. It is simply a case of bending Nature to our will, and thus correcting some of her inequalities. In the case of a Vine or a Melon we resort to a severe stopping and thinning of the shoots, and I suspect the only reason why we do not systematically reduce the size of some of the leaves is that they have no natural points of division. By manipulating the shoots of a Vine or Melon we manage to get weighty crops of fruit, far superior to those which could be obtained without such reductions of growth. Why, then, should the practice of defoliating Tomatoes be termed by thinking men a barbarous one?—H. D.

A JAPANESE BLOOD-LEAVED MAPLE HEDGE.—Considering the many wonderfully beautiful effects to be had from the arrangements of plants unknown to the general public, it is puzzling that some of our more wealthy citizens do not interest themselves more in beautifying the surroundings of their residences. The resources are unlimited. Take the subject of this paragraph for instance. A hedge of this lovely Japanese Maple would surpass any effect ever attempted in landscape arrangement, and so simple too. The writer drew inspiration for this commendation from a view of about a dozen nursery rows of these Maples, the leaves just expanded, each extending a distance of 100 yards. Their beauty was unsurpassed, and would continue all the season.—T. M.



ODONTOGLOSSUM CRISPUM PRINCE OF WALES.

At the Drill Hall, on June 14th, Messrs. H. Low & Co. of Bush Hill Park Nurseries, Enfield, showed a superb form of *O. crispum* under the above name, and which is depicted in the woodcut, fig. 100. It is one of the finest varieties that has been shown, and the Orchid Committee showed its appreciation by according to it a first-class certificate and a silver Banksian medal. As may be seen, the shape of the flower is perfect, and all the segments are of exceptional substance. The sepals, petals, and lip are all pure white save for an occasional flush of rose that serves but to enhance the beauty of the flower. In the centre of the lip are brown blotches, the front lobe being white. The spike carried several flowers, and it cannot be doubted that this Orchid attracted as much or more attention than any other exhibit in the show.

CYCNOCHES MACULATUM.

This singular species, though introduced in 1839, is probably very rare in cultivation, and only seen occasionally. It has the characteristic growth of *C. chlorochilon*, but the flowers occur on semi-pendant racemes, and are pale yellow, with a plentiful spotting of rich crimson purple. It is not difficult to cultivate, thriving well in a substantial compost of peat fibre, loam, and sphagnum moss in equal proportions. It may be grown in either baskets or pots, these being well drained, and the crocks covered with a layer of rough moss. Water must be freely applied to the roots while growing, but syringing the plants is not to be recommended, especially at that stage when the young growth is apt to catch the water. After the leaves have fallen keep the roots quite dry until signs of movement appear in spring. During the earlier stages of the growth of the plant the leaves are very sensitive, and unless carefully shaded they are easily damaged. As they get older the foliage becomes harder, and more light may be allowed. The worst insect enemies to these *Cycnoches* is red spider and scale, both of which must be kept under, or good results will not follow. It is a native of Mexico.

AERIDES FIELDINGI.

The Fox-brush *Aërides*, as this species is popularly called, is one of the finest in the genus, the long, gracefully arching spikes of rosy blossoms being very fine, either alone or arranged with other Orchids in the flowering house. The plant itself is of fine habit, and the spikes appear from the upper joints of the stem. In a large tropical house this species may be easily grown on the central stage, the roots being potted in sphagnum moss and charcoal alone. Smaller plants do well in baskets suspended from the roof in the same house. It is a native of Northern India, introduced in 1850.

CAMAROTIS PURPUREA.

This pretty species is now very seldom met with in our Orchid houses, and many cultivators would not know it. The plant belongs to the same tribe as the *Vandas*, having scandent slender stems a yard or more in length, which bear toward the upper part racemes of pretty rosy purple flowers. I have often received it from seafaring friends who have purchased it in Calcutta; but, as may be imagined, these plants are not collected with much care, and are in consequence difficult to establish. When healthy, and at home in the Orchid house, the plant is, on the other hand, easily grown and very free-flowering, and is certainly worthy a place where a representative collection is aimed at.

The plants do best in the East Indian house, and may be grown in pots or baskets of sphagnum moss and charcoal in equal proportions. Plenty of root and atmospheric moisture is necessary while the plants are growing, while during winter only enough to keep the growth in good condition is necessary. Although sent home to this country by Gibson when collecting for the Duke of Devonshire's collection in 1837, it had long been cultivated in India.—H. R. R.

ROYAL HORTICULTURAL SOCIETY'S

EXAMINATION IN HORTICULTURE, 1898.

IN your comments on the above examination (page 497, June 16th), you state that one reason why there is not a greater increase in the number of candidates is because a "very considerable number of gardeners conceive that students in colleges and technical schools should, as such, have a separate examination." I fail to comprehend why it should be so. I take it that those gardeners who advocate a separate examination for trained students would also advocate an advanced series of questions for such candidates. If that were so the greater honour would still be due to the successful candidates.

The examination is not what may be termed competitive, therefore I cannot see any injustice to gardeners, nor any advantage in having two sets of examinations. There is no reason why gardeners who may be desirous to pass the examination should not qualify themselves by careful reading and study. Such men possess a great advantage, in so far as the details of practical work is concerned, over the young student, who may be struggling to understand the principles of theoretical and practical horticulture.

Possibly if the questions were confined to the practical division more

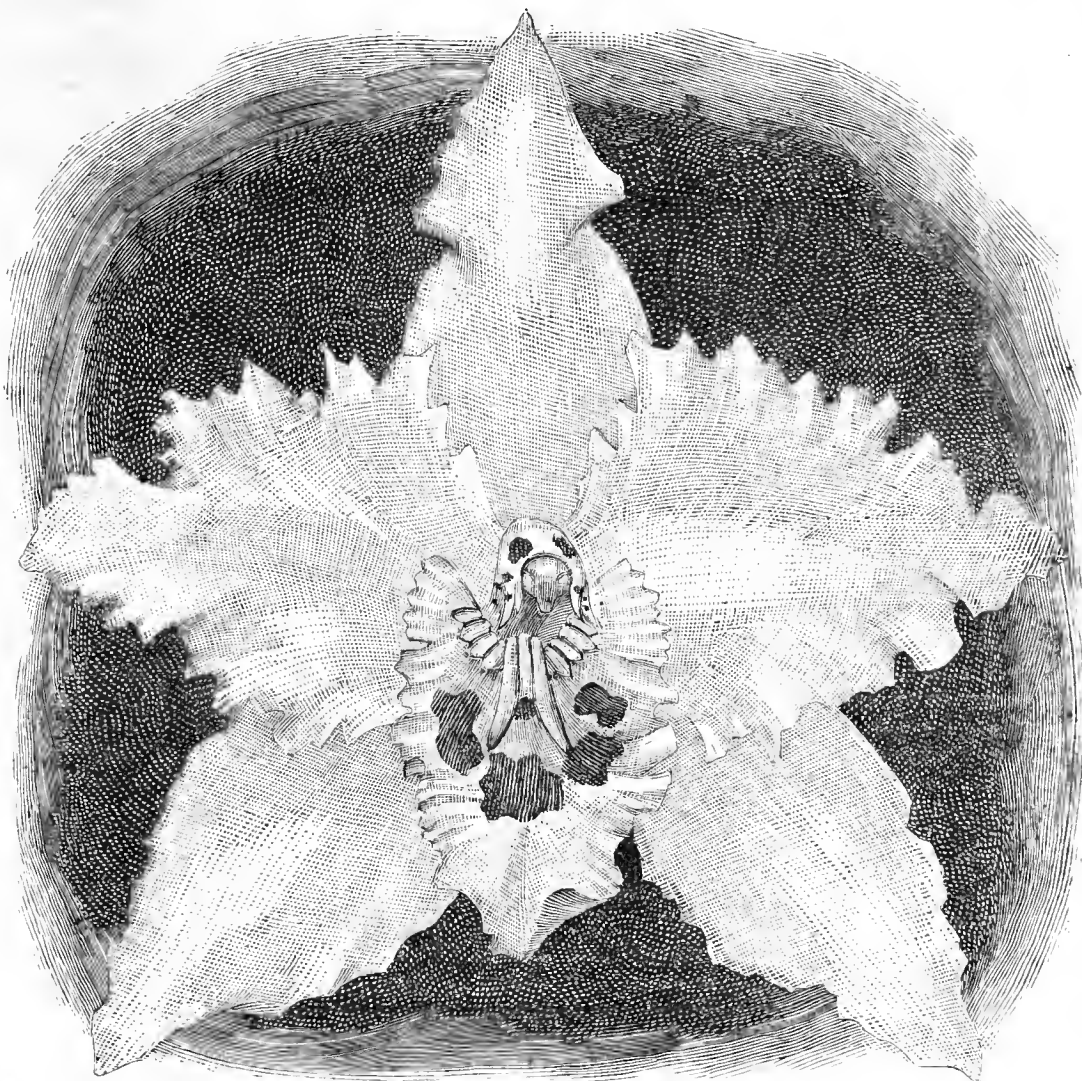


FIG. 100.—ODONTOGLOSSUM CRISPUM PRINCE OF WALES.

gardeners would enter for the examination, but I consider it would be a great misfortune to dispense with the elementary questions, as it is in these subjects that the majority of young gardeners are deficient in knowledge. Many instances could be quoted in which gardeners have strong objections to elementary principles, and absolutely decline to entertain their consideration. I have recently had experience of young gardeners declining to attend lectures dealing with the physiology of plant life, and the only excuse they had to offer was the difficulty to understand the "hard" names.

Again, I fail to understand why any person should object to these examinations on the ground that they have a tendency to "manufacture gardeners by artificial processes." In the first place it may be admitted that the fact that a person being able to give correct answers to a series of questions does not constitute a gardener, but it will generally be admitted—all other matters being equal—that anyone who possesses a knowledge of the functions of the various organs of the plants, their food, and of what is beneficial or detrimental to their healthy development, is surely better qualified to hold a responsible position than one who has no such knowledge.

The thanks of the gardening community are due to the Royal Horticultural Society for the efforts put forth to improve the education of gardeners, and to raise their status. There is a considerable amount of ambition amongst students to obtain a first-class certificate from the recognised highest authority on horticultural matters, and I trust the

Council will continue to hold their examinations, and thereby give encouragement to deserving and persevering young men to acquire as full a knowledge as possible of the occupation to which they intend to devote their lives.—W. NEILD, *Holmes Chapel*.

[If our correspondent thinks the *Journal of Horticulture* has the remotest objection to these examinations he makes a very great mistake. The Secretary of the R.H.S. could, if he liked, tell him quite a different story, but it is not in the least necessary. At the same time it is in the province of the *Journal* to register differing opinions on this or any other subject in which its readers are interested, and this will be done so long as they are appropriately expressed, as in the above communication, by an esteemed and able coadjutor.]

DISEASED BROCCOLI.

THE specimen from "K., *Dublin*," has a very singular appearance—Leaf stout and leathery, midribs yellowish, veins more so, with yellowish-white patches on the surface, and blackish spots here and there on the golden groundwork, the whole set off by a broad, more or less erumpent, white or silvery margin, very conspicuous from the contrast of the latter with the purplish-green parts of the leaf, which were the only normal portions.

The yellow and the black were determined as a peculiar form of the so-called "clubbing" (of Cabbages, &c.), and "finger-and-toe" (of Turnips) slime fungus, *Plasmodiophora brassicae*, and the white as the characteristic type of the white-rust disease of Cabbages and many cruciferous plants, the fungus named *Cystopus candidus*. There were, however, no outgrowths of this parasite, but very sparingly those of the putrefactive mildew of Cabbages and Turnips, the fungus, *Peronospora parasitica*. The latter is very often associated with white-rust fungus, sometimes the one and at others, the other being in the ascendant—that is, the fertile hyphae of *Cystopus candidus* may break through the epidermis of the host-plant and produce innumerable spores (conidia), these being distributed as visible white dust when the infested plant is sharply struck by foot of man or beast. In some cases (and this under consideration represents one) the putrefactive mildew, *Peronospora parasitica*, appears first and absolutely without any concurrent outgrowths of white-rust, nor do any in such instances appear afterwards, the putrefactive mildew being entirely master of the situation, ousting the other.

These trifles are the very root of the evil, and narrow the thing down to two forms, which may be still further reduced to one, the Myxomycete or slime-fungus, as this has sprung from the soil and entered the plant by the root-system. But the parasite must not be confounded with ordinary "clubbing" or "finger-and-toe" slime-fungus, for there is no thickening of the parts, the plasmodia simply streaming through the plant cells and breaking them down, as indicated by the yellow appearance, and the "fruits" form in the black dots, being simply spores or plasmodia differentiated and enclosed by an integument. In this state (resting) it closely resembles a "bacteroid" converting free nitrogen into assimilable (by plants), and the streaming of the plasma in the tissues of the living plant so much accord in appearance as to be scarcely distinguishable from each other. Both possess Amæba-like movements, but the "bacteroides" are symbiotic or helpful to the host, and the slime-fungus parasitic (destructive to the infested plant).

This preliminary appears relevant, from the circumstance that "K., *Dublin*," alludes to the disease infesting Plums, Cherries and Peaches. The specimen to hand (of Broccoli) has an analogous connection with the disease known as browning or "brunure" in Vines, a very similar micro-organism infesting the common Alder, *Alnus glutinosa*, and its leaves often have the whitened appearance at their margins, ultimately becoming black and falling off. The organisms, however, are quite distinct, or they assume different forms according to the host. That submitted by your able correspondent appears identical with the "brunure" of the Vine, or *Plasmodiophora vitis*, or *Pseudo-cominis vitis*, *Debray*. This I have found on Pelargoniums, Orchids, Tomatoes, Vines, and Kale, the "yellow" always preceding the brown or black; and sometimes on Brassicas, not always, the putrefactive mildew (*Peronospora parasitica*) also presents itself, and may easily be mistaken for the real culprit.

I have given a brief outline of the disease as I find it in Nature, and consider that it may be referred to the *Pseudo-cominis*, being merely a variety, as found on the Broccoli examined, the other bodies being a sequence. But let no one run away with the impression that there can be no harm done by either of the other pests, for both are parasites, commonly occurring together, and also separately, as before stated. The slime fungus in this case is the cause of the yellow and the black. The parasite has come from the soil, entered the plant from without, even if it went over as a spore with the seed, and this is a main point, for no treatment can, so far as I have investigated, enter the tissues of a living plant and kill micro-organisms therein without prejudice to the host.

The cause of the attack is (1) presence of the micro-organism, and (2) favouring conditions of existence. I am not prepared to state positively, but I consider the *Pseudo-cominis* leads a free as well as parasitic mode of life, and there is hope of prevention. For this purpose there are poisons, the most commonly used being that of fresh gas lime, which I, with many others, have frequently advised for preventing the clubbing of Cabbages and other pests. I do not consider it has any

equal for killing pests infesting land, but I find it also injures the nitrifying micro-organisms, practically sterilising the land for crops for a time.

For bare land I have not, however, found gas lime particularly hurtful when had fresh from gasworks, spread evenly on the surface, and left there as many weeks as stones or tons used per rod or acre. I have used as little as 1 stone per rod, or 1 ton acre when land must be cropped soon afterwards, and from that up to 5 stones per rod, 5 tons per acre on foul land, this being a maximum amount, and thoroughly efficacious. It was left on the surface for six weeks, and then turned under. I have tried it in both fields and gardens, and never knew it fail, nor even do much harm if put on in the autumn. This I advise, but it must not be used over the roots of crops, bushes, or trees.

Gas lime is a limited substance, I therefore pass to something simpler and safer—namely, lime. The nitrifying micro-organisms like and must have lime, and I believe, though I have not proved it, potash and soda. Lime alone, best chalk, or if vegetable soil magnesian, 1 to 10 tons per acre, or 1 to 10 stones per rod, are the amounts in which I have used it, except for particular purposes, and always to the annihilation of slime fungus. Up to 5 tons as a preventive, the smaller quantity (1 ton or 1 stone every year), and then the amounts as per year between dressings. I consider the 1 ton or 1 stone essential on all but calcareous soils. By this I mean those having the limestone or chalk mixed with the surfacing soil, for some soils on those formations need liming as much as many others.

As a cure the quantity must not be less than 5 tons, better the 10 tons per acre or 10 stones per rod. Let it be freshly burned, place in convenient lumps, just slake so to cause it to fall to a fine powder, and spread whilst hot. Leave on the surface for a time, not striving to place it in contact with the pests, but let the lime go to them in a natural way. The rains will come soon enough, and the lime will get down quite as fast as is desirable. It acts mainly on the organic matter in the soil, and I believe the ammonia gas plays the part of killing the micro-organisms and pests. Anyway, as the lime goes in the pests clear out, and the crops thrive well the following season. But this depends, for if put under in a caustic state it sterilises the land for a time.

Another application that I have found of great service in killing *Plasmodiophora brassicae* or *Pseudo-cominis vitis* is best chalk lime, air-slaked or freshly burned, and slaked with the smallest quantity of water to cause it to fall to a fine apparently dry powder; using when cool twenty parts of this to one part of kainit, 1 to 10 tons per acre, or 1 to 10 stones per rod. Broadcast it as soon as mixed, and leave it on the top for a time on arable land or vegetable ground before ploughing or digging under, applying in autumn. On sour grass land, orchards, and fruit plantations the rains will do the needful in washing in. But though the mixture may be used I think it better to use the lime separately, freshly burned, slaked, and put on hot, then follow with the kainit as soon as cool or not later than in a few days. Five tons of lime, and 5 cwt. of kainit per acre, or 5 stones of lime and 1 stone of kainit per rod will be required on tainted land, and double quantity on badly infested ground.—G. ABBEY.

CLEAN VERSUS DIRTY POTS.

UNDER the heading "Young Gardeners' Domain," in the *Journal* of June 2nd, page 469, "A Young Ross-shire Gardener" has something to say on the subject of "clean versus dirty pots." The remark, "clean pots are not necessary for healthy growth," which was one of the points in my lecture on fruit growing which recently appeared in your pages, is evidently more than this young gardener can swallow. He is to be commended in doing what he has done—going direct to Dr. "Journal" with his complaint. I am glad he has brought the matter up, and sorry I could not reply sooner. I have had several letters on this subject, and as there seems to be a misunderstanding as to what I meant, I am glad of this opportunity to make it clear.

First, let me say that the part of the pot I referred to is the inside only, and am not to be understood as advocating dirty and untidy habits. Although the washing and cleanliness of the outside of the pots in which plants are grown is of the first importance in private, and only a secondary consideration in market establishments, still, in the latter, where we find men—often young men—with considerable latitude in the management of the plants under their charge, make cleanliness and order a first consideration, we generally find the plants doing well, and is a sure indication of a good workman.

Your correspondent conjures up the shade of his dear old master. It is not so much these dear old shades I wish to be at, as those younger men of the present generation, who possess so many advantages for keeping themselves abreast of the times in all things pertaining to their calling, but who persist in following a blind rule-of-thumb practice, for no other reason than "that is how it was done when I served my time." I, too, have served under some of these "old shades," and was brought up in the full belief that cleanliness inside the pot was essential to the proper growth of the plant.

Nor do I ever remember hearing, or seeing anything written to the contrary, until I had been about fifteen years at the profession. Then I went to a place—the largest and best I had been in—where no pots were washed before use. I thought it rather queer practice at first, but when I saw the plants thrive as well as any I had seen, I could not help deploring the wasted time and money annually spent all over the country, and I resolved when I had a charge of my own I should certainly follow

out this practice, which I have now done for several years, with the best results.

A "Young Boy," June 16th, page 508, very nicely dispels the apparent inconsistency your Ross-shire correspondent sees in the practice I advocate, and my advice to young men to be thorough in all they do and have an ambition to excel. If a young man sees an easier and a cheaper way than what he now practises to gain a given end, and does not adopt it, there is little hope of his excelling in this or any other calling.

This is a matter that any in doubt can test for themselves, and I trust that the next batch of plants "Young Ross-shire" has to pot he will use one half clean pots and the other half unwashed, and give a description of the difference in the plants, if any, at the end of, say, six months. I should not be surprised if the *Cineraria* plant which stuck a little to the side of the pot with him lately is the best in the batch now.

Breaking a few roots off a plant, which to many is still such a momentous and serious affair, affords a good pretext for me to enlarge on some of the queer notions still held by many "old shades," as judged by present day, up to date, methods of cultivation, but this, with the Editor's permission, I must leave for a future occasion.—D. BUCHANAN.

[We will wait patiently. "Notes on queer notions" ought to be interesting.]



ROSE SHOW FIXTURES IN 1898.

- June 30th (Thursday).—Gloucester, and Norwich.
- July 2nd (Saturday).—Crystal Palace (N.R.S.).
- " 5th (Tuesday).—Diss, Harrow, and Hereford.
- " 6th (Wednesday).—Chelmsford, Ealing, Farningham, Hanley,† Hitchin, Redhill (Reigate), and Tunbridge Wells.
- " 7th (Thursday).—Woodbridge.
- " 8th (Friday).—Ulverston.
- " 9th (Saturday).—Manchester.
- " 12th (Tuesday).—Westminster (R.H.S.), and Wolverhampton.*
- " 13th (Wednesday).—Bedford, Ipswich, Maidstone, and Newcastle-on-Tyne.*
- " 14th (Thursday).—Halifax (N.R.S.), Brentwood, Canterbury (Hospital Fund), Helensburgh, Reading, and Eltham (altered from June 30th).
- " 16th (Saturday).—New Brighton.
- " 20th (Wednesday).—Cardiff.†
- " 21st (Thursday).—Sidcup.
- " 26th (Tuesday).—Tibshelf.
- Aug. 4th (Thursday).—Bedale.

* Shows lasting three days. † Shows lasting two days.

—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

TWO-DAYS ROSE SHOWS.

I WAS glad to see my friend, "D., Deal's," disclaimer on page 520, though it is rather like that of the street lad who, upon being found out, cried, "Please, sir, it wasn't me, it was the other boy." The kindness and courtesy of Mr. Mawley are universally acknowledged; but, at the risk of receiving another shaft from "D., Deal's," well-furnished quiver of satire, I must say that for the N.R.S. to advertise two-days shows side by side with those of its affiliated societies is rather a strange way of displaying its disapproval of such two-days shows, and may possibly mislead others less obtuse than myself.—HENRY B. BIRON.

ROSE SHOWS.

NATIONAL ROSE SOCIETY—BATH.—JUNE 23RD.

THE southern show of the National Rose Society was held in the Sydney Gardens on the above date. Fears were entertained that many exhibitors would not be ready to compete owing to the backwardness of the blooms, and this proved to be the case. The competition in the large classes was not so keen as usual; in many cases it was simply a question of dividing the honours. This was most notable in the Hybrid Perpetual classes. In the section for Teas and Noisettes the competitors were more numerous, and the quality of the blooms excellent. The garden Roses formed one of the chief features of the show, and were greatly admired by the dense crowd which thronged in the tent during the afternoon. The Rose world was well represented by the growers, both amateur and professional, from various parts of the country, though they were not all exhibitors.

In the premier class for forty-eight blooms, distinct, Mr. B. Cant, Colchester, secured the blue ribbon by winning the Mayor's cup, value £8 8s. The exhibit was very even throughout, and contained some grand flowers. The varieties were Ulrich Brunner, Kaiserin Auguste Victoria, Magna Charta, Rubens, Annie Laxton, Corinna, La Fraicheur, Souvenir de S. A. Prince, Madame G. Luizet, Violette Bowyer, Margaret Boudet, White Lady, Niphetos, Gustave Piganeau, La France, Lady Mary Fitzwygram, S. M. Rodocanachi, Souvenir d'un Ami, John Hopper, Jean Ducher, Jean Soupert, Marchioness of Downshire, Général Jacqueminot, Cleopatra (grand), Alphonse Soupert, Hon. Edith Gifford, Fisher Holmes, Maréchal Niel, Caroline Testout, Madame Hoste, Marie Baumann, Mrs. W. J. Grant, Devoniensis, Marie Van Houtte, Catherine Mermet, Madame Delville, Baroness Rothschild, Chas. Lefebvre, Anna

Olivier, Dupuy Jamain, Souvenir d'Elise Vardon, Prince Arthur, Margaret Dickson, Madame Cusin, The Bride, Viscountess Folkestone, and Comtesse de Nadaillac. Messrs. D. Prior & Sons, Colchester, were placed second in what must have been a very close competition. Their best specimens were Souvenir de S. A. Prince, Tom Wood, Lady Mary Fitzwygram, Prince Arthur, Marchioness of Dufferin, Souvenir d'un Ami, Captain Hayward, and Madame G. Luizet.

In the class for twenty-four blooms, distinct, Mr. G. Prince, Oxford, secured first in a close competition with fresh and bright blooms of Lady Mary Fitzwygram, Souvenir de S. A. Prince, La France, Maréchal Niel, Niphetos, Marquis Litta, Medea, Cleopatra (grand), Cornelia Koch, Marquis of Duferin, Princess of Wales, Jeannie Dickson, Comtesse de Nadaillac, Viscountess Folkestone, Kaiserin Auguste Victoria, Bridesmaid, Ernest Metz, M. Furtado, La Fraicheur, The Bride, Rubens, Madame Cusin, Madame Hoste, and Lady Alice. Messrs. J. Burrell & Co., Cambridge, took the second place with very even blooms; the best were Lady Mary Fitzwygram, White Lady, Caroline Testout, Niphetos, Innocente Pirola, Madame Lambard, and Jean Ducher.

Two exhibitors contested in the class for twenty-four triplets, Messrs. D. Prior & Son proving the winners with a fine exhibit. The varieties were Mrs. Sharman Crawford, Tom Wood, Lady Mary Fitzwygram, A. K. Williams, Prince Arthur, Madame Gabriel Luizet, Madame Hoste, La Fraicheur, La France, Rubens, White Lady, Mrs. John Laing, Grace Darling, Fisher Holmes, Marie Van Houtte, Hon. Edith Gifford, Mrs. Harkness, Mrs. W. J. Grant, Souvenir de S. A. Prince, Prince Camille de Rohan, and Niphetos. Messrs. Frank Cant & Co., Colchester, were second with, among others, good blooms of Princess Beatrice, Alphonse Soupert, Emily Laxton, Niphetos, Mrs. W. J. Grant (grand), Caroline Testout, and A. K. Williams.

For twelve blooms, any Rose, except Teas or Noisettes, a stronger competition was forthcoming, Messrs. Prior & Son winning with a grand box of Lady Mary Fitzwygram; the flowers were exquisite. Mr. B. Cant was second with a very fresh box of Madame Gabriel Luizet, while Messrs. F. Cant & Co. came third with a box of very large Lady Mary Fitzwygram.

The Tea and Noisette classes were much better filled as a whole. In the class for twenty-four distinct varieties Mr. G. Prince was well to the fore with a capital exhibit. The flowers were Princess of Wales, very fine; Hon. Edith Gifford, Souvenir d'un Ami, alba rosea, Madame Cusin, Medea, Souvenir de S. A. Prince, Comtesse de Nadaillac, Niphetos, Rubens, Amazone, Cleopatra, Maréchal Niel, Souvenir d'Elise Vardon, Bridesmaid, Innocente Pirola, Maman Cochet, Madame Hoste, Catherine Mermet, Jean Ducher, Madame de Watteville, Marie Van Houtte, The Bride, and M. Furtado.

Messrs. F. Cant & Co. were second with a very good exhibit, Cleopatra, The Bride, Maman Cochet, Princess of Wales, Bridesmaid (good), Sappho, Catherine Mermet, and Golden Gate being all worthy of mention. Messrs. D. Prior & Son were third with good blooms of Souvenir de S. A. Prince, Madame Hoste, Catherine Mermet, Rubens, and Maman Cochet.

For twelve distinct flowers Messrs. J. Burrell & Co. were first with an even display. The varieties were Souvenir d'Elise Vardon, Cleopatra, Princess of Wales, Rubens, Bridesmaid, The Bride, Souvenir d'un Ami, Golden Gate, Madame Hoste, Sylph, Hon. Edith Gifford, and Luciole. Mr. John Mattock, Oxford, was second with good Comtesse de Nadaillac, Maréchal Niel, Medea, Catherine Mermet, Rubens, Madame Caroline Kuster, and Souvenir d'Elise Vardon. Messrs. G. Cooling, Bath, were third. Their best flowers were Medea, Niphetos, Madame Hoste, and Jean Ducher.

Although only two competitors faced the class for thirty-six distinct varieties of garden Roses in trusses, the exhibits were remarkably fine. Messrs. G. Cooling & Sons secured the premier position. Their huge bunches were beautifully arranged, and, judging by the crowd that surrounded the exhibit, they were greatly admired. The varieties employed were lucida plena, Cooling's Yellow Noisette, Janet's Pride, Bardou Job, Persian Yellow, W. A. Richardson, rugosa delicata, Yellow Austrian Briar, Claire Jacquier, Papa Gontier, macrantha, Blanche de Coubert, Tuscany, Papillon, Madame A. Carrière, Harrisoni, Red Provence, rugosa fimbriata, Purity, Marquis of Salisbury, Gustav Regis, Gloire de Rosamene, Blanche Moreau, Duchesse d'Anerstadt, Hebe's Lip, Morletti, Dometil Boccard, Ma Capucine, Crested Moss, Etoile de Mai, Homer, Mdle. Laurette Messimy, Beranger, Madame Eugène Resal, and Abbé Thomasson. Messrs. Paul & Son, Cheshunt, were second with a very effective display. The most noteworthy were Camoens, Blanche Moreau, W. A. Richardson (grand colour), Paul's Carmine Pillar, Gustav Regis, Royal Scarlet, and Laurette de Messimy.

Mr. Chas. Turner, Slough, received the first prize for eighteen varieties with a fine exhibit. They comprised Janet's Pride, Madame P. Ducher, Blairi No. 2, Madame Plantier, Common Moss, Madame G. Bruant, fimbriata, Cabbage Provence, Mignonette, Bardou Job, De Meaux, Gloire des Polyantha, Pomifera, Reine Olga de Wurtemberg, Rose Apples, Blanche de Coubert, Anna M. de Montravel, and W. A. Richardson. Mr. Frank Cant was a very close second with good branches of Gustav Regis, Copper Austrian Briar, and Annie of Gierstein. Mr. John Mattock third. The gold medal for three trusses of any new seedling Rose was awarded to Messrs. Alex. Dickson & Sons, Newtownards, for a new Hybrid Tea, *Bessie Brown*, a pale creamy rose, of splendid substance, almost the counterpart of Lady Mary Fitzwygram, save in colour. The same exhibitors staged a box of new Roses, exhibiting Alice Graham, Mrs. E. Mawley (grand), Daisy, Countess of Caledon, and Tom Wood. The last-named secured the silver medal for the best Hybrid Perpetual in the show.

Mr. G. Prince secured the first prize with twelve triplets, Teas or Noisettes. The varieties employed were Cleopatra, Innocente Pirola,

Souvenir d'un Ami, The Bride, M. Furtado, alba rosea, Madame Cusin, Madame Hoste, Souvenir de S. A. Prince, Comtesse de Nadaillac, Princess of Wales, and Hon. Edith Gifford. Mr. B. Cant was second with good triplets of Cleopatra, Madame Hoste, Souvenir de S. A. Prince, Souvenir d'un Ami, and Jean Ducher; Mr. D. Prior third with good blooms, which, however, lacked the colouring that was so noticeable in the other stands.

For twelve blooms, one variety, Mr. G. Prince was first with a grand box of Maréchal Niel; Mr. B. Cant second with an exhibit of Cleopatra; and Mr. D. Prior third with Souvenir de S. A. Prince.

Single Roses were very bright and attractive. Messrs. Paul & Son, Cheshunt, were placed first for a very fine display. The varieties were Paul's Royal Scarlet, a grand single Rose; Paul's Single White, Carolina, Lady Penzance, R. rugosa, Rose Bradwardine, Paul's Carmine Pillar, macrophylla, rugosa alba, pomifera, and Nutkatense. Mr. G. Cooling was second with good trusses of Cooling's Single Crimson Bedder, macrantha, and the Austrian Briars.

The competition in the amateurs' section was very similar to that in the open classes. The boxes staged were undoubtedly good, but many well known exhibitors were missing. For twelve distinct Roses, Mr. Alex. Hill Gray, Beaulieu, Bath, was first with a very strong stand of Teas, the varieties were Souvenir d'Elise Vardon, Comtesse de Nadaillac (grand), Hon. Edith Gifford, Maman Cochet, Anna Olivier, The Bride, Princess of Wales, Maréchal Niel, Catherine Mermet, Marie Van Houtte, Princess Beatrice, and Golden Gate. This exhibit also won the piece of plate presented by Messrs. G. Cooling & Sons. Rev. J. H. Pemberton, Havering-atte-Bower, Romford, was second with good blooms of Caroline Testout, Marchioness of Dufferin, Anna Olivier, and Souvenir d'un Ami. Mr. S. P. Budd, Bath, third. The last named exhibitor was first for six triplets, with excellent examples of Madame Cusin, Marie Van Houtte, Princess of Wales, and Countess of Pembroke.

The Rev. Robt. Powley, Upton, Scudamore, was placed first for twelve distinct varieties. The competition for six varieties was keenly contested, Mr. H. P. Landon, Brentwood, being placed first; Mr. L. Parry, Stinsford House, Dorchester, second.

Mr. Conway Jones, Hucclecote, Gloucester, won the Prince Memorial cup for Teas and Noisettes.

Mr. Alex. Hill Gray was placed first for eighteen distinct varieties of Teas and Noisettes with a very strong exhibit. The best varieties were Anna Olivier, Princess of Wales, Souvenir de Thérèse Levet, and Marie Van Houtte.

Miscellaneous exhibits were a great feature, Messrs. G. Cooling & Son making a fine display of garden Roses, Palms, and other decorative plants; also a splendid exhibit of Pæonies, comprising most of the popular kinds, such as Madame Calot, fulgida Artemense, Princess Galitzen, and Baron Jas. de Rothschild.

Messrs. P. Barr & Sons, King Street, Covent Garden, staged one of their well-known displays of hardy flowers, the chief features being large collections of Pæonies, Irises, Ixias, Delphiniums, and a variety of herbaceous plants.

Messrs. R. Veitch & Son, Exeter, had a very attractive exhibit, comprising rock plants, Water Lilies, and an imposing display of hardy flowering plants, the whole forming a very bright arrangement.

ROSE CONFERENCE.

The conference held by the National Rose Society in conjunction with the exhibition at Bath proved a very successful meeting in spite of the opposition of the Coldstream Guards band, which was discoursing sweet music on the lawn. Most of the prominent rosarians were present, indeed, it might be described as a meeting of experts, though the general public were fairly represented. Mr. R. B. Cater, Bath, occupied the chair, and apologised for the compulsory absence of the Mayor. After a few brief remarks he introduced Mr. F. Cooling, who was booked to read the paper on "Rose Pruning."

The essayist commenced by dividing his subject into two divisions—namely, Roses that require close or hard pruning, and those which require very little pruning in spring. In the case of pruning Hybrid Perpetuals the first year, Mr. Cooling advocated following the orthodox advice—Prune strong growing varieties to five or six eyes, while the weaker sorts should only be allowed three or four.

Referring to garden Roses, the essayist commenced by saying there was far too much pruning done to these Roses at the present time, an opinion subsequently endorsed by the other experts present. What was really required was a thinning out of the growths at the proper season, this being done as soon as flowering ceased. By removing the part that had completed its work, the plant was enabled to utilise its energies in building up the young growth for next season's flowering, and allowing the sun and air to thoroughly mature and ripen the wood. By adopting this system the young wood is vigorous yet firm. In the autumn or early spring these growths should not be shortened, or not to any great extent, but be simply bent or pegged down. The result would be wreaths of Roses throughout the entire length of the plants.

The Noisettes, and especially Maréchal Niel, should be pruned hard as soon as the flowering period was over, probably in May or June. Select a few of the best growths that quickly appear, and rub out all weakly breaks. In September or October these growths should be pinched, or pruned back a few inches, to plump up the eyes. The Bourbon Roses require moderate pruning in spring. The Austrian and Penzance Briars should not be topped at all, but thinning is necessary, especially in the latter section. The Banksians, Crimson Rambler, and Paul's Carmine Pillar Roses require little pruning. The strong shoots should be encouraged and laid in almost their full length. Mr. Cooling then alluded to the magnificent garden Roses to be seen in our cottage

gardens, which were rarely, if ever, pruned, and suggested that gardeners might take an object lesson from them.

Mr. ED. MAWLEY, the popular Secretary of the R.H.S., after complimenting Mr. Cooling on his concise paper, said he was under the impression that the mode of pruning depended on the object in view. If we required exhibition Roses we must prune hard; on the other hand, for a garden display, the less pruning the better.

The Rev. J. H. PEMBERTON doubted very much whether we really knew much about Rose pruning, for some of the best Roses he had ever exhibited were produced on bushes that were left unpruned. He then alluded to the fact that average gardeners pruned all their Roses alike, without regard to their method of flowering; as a consequence many of the Briars never bloomed at all. He thought at the present time we had far too much of the knife in our garden Roses and too little sun. He maintained the latter was far more important in the production of Roses than the pruning knife. He also thought our Hybrid Teas were cut far too much.

Mr. GRANT followed in the same strain, instancing the wild Roses. It was preferable to leave garden Roses alone, as far as pruning proper is concerned. The cardinal points were: Remove all used up wood, and leave the strongest shoots. These do not require topping in the spring. In the case of weakly growers, pruning becomes a necessity to obtain good results.

Mr. ALEX. HILL GRAY, in the course of some humorous remarks, dwelt chiefly on the pruning of the Maréchal Niel. When he first went to reside in Bath, he protected his plants of this variety with straw; but during the winter months the mice barked the whole of them, so that he had no Roses the following summer, but the plants made such a growth that he was repaid the succeeding year with a wealth of magnificent Roses. This lesson taught him to prune hard as soon as flowering is finished, a practice he now religiously follows. He finds this Rose likes a dry climate, and will not grow satisfactorily in a damp one. As an instance, he alluded to the unsatisfactory state this variety is in in the counties of Devon and Cornwall.

Mr. F. GRIFFITH, Kotagira, Nilgiris, Southern India, somewhat puzzled the meeting by asking when he should prune his Roses, seeing that he had no winter season whatever. Mr. Grant advised him to prune when the plants appeared most at rest, which he would find about two months out of each year.

Mr. LANDON, Brentwood, and Mr. CHALLIS followed with a few remarks.

Mr. COOLING replied to the various questions put to him. The meeting then accorded him a hearty vote of thanks, and a very pleasant gathering was brought to a close.

RYDE, I.W.—JUNE 23RD.

THE above Society held its annual exhibition on Thursday last in the beautiful grounds of Westmont by kind permission of General Berthon, and notwithstanding the backward season some excellent stands of fresh and bright flowers were produced. Teas were very prominent throughout the stands, and also the H.T.'s; while the H.P.'s, although generally rather undersized, were an excellent colour.

In the open class for thirty-six blooms, in not less than twenty-four varieties, Messrs. F. Cant & Co., Colchester, won the gold medal, the silver-gilt medal being taken by Mr. R. E. West, Reigate. These exhibitors took the same order in the class for twenty-four blooms, distinct, both showing well. For twelve, distinct, amateurs, Mr. R. E. West was a good first; Mr. D. Seaton, Bitterne, second. For a miscellaneous collection of garden Roses, Messrs. F. Cant & Co. were first, and Mr. G. H. Kent, gardener to Mrs. Croft Murray, Ryde, second. Mr. B. Ladhams, Shirley, won the first prize for a bouquet of Roses with a very tasteful arrangement.

Several classes were restricted to Isle of Wight growers. For twenty-four distinct varieties, Mr. J. O. Brook, Fernside, Ryde, won the silver medal, beating Mr. G. H. Kent, who was second. Mr. J. O. Brook was also first for eighteen distinct blooms. In the class for twelve distinct, Mrs. E. C. Murray was first, Mr. G. Williams, Gatcombe, second, and Mr. J. Lee White, Cowes, third. For twelve H. P.'s only, Mr. J. O. Brook was again first, and Mr. G. Williams second. Mr. J. O. Brook was also first for eighteen, six varieties, three of each. Mr. G. Honeybourn, gardener to Lady Daly, Ryde; Mr. Frank Rashly, Haven Street; Miss Carter, Ryde; and Mrs. E. C. Murray were the prizetakers in the minor classes.

For a table decorated with Roses, with any foliage, Mr. Lee White, Cowes, was first, W. A. Richardson being the chief variety employed with chaste effect; Miss K. Collyer, Ryde, was second. Baskets of Roses, ladies' sprays, gentlemen's buttonholes, and epergnes of cut flowers, as well as floral designs. All helped to add attraction and interest to the exhibition.

The collection of wild flowers was one of the best that has been seen in the Island for some time, the wet and cold spring having helped towards the development of the native Orchids, that are chiefly found on the hills. The Bee Orchis, *Ophrys apifera*, is very plentiful and fine this year; the Black-fly Orchis, *Ophrys muscifera*, was finely developed; and also the Butterfly Orchis, *Habenaria chlorantha*; as well as the Green Man and the Frog Orchis. These and the varieties of *O. maculata*, some so fine as to remind one of *O. foliosa*, formed a very interesting and attractive feature to the botanists and others interested in the native flora. Mr. B. Ladhams, Shirley Nurseries, Southampton, exhibited a fine collection of hardy herbaceous plants and border Pinks, and was awarded the certificate of merit of the Isle of Wight Horticultural Improvement Association. Mr. Butcher and Mr. Mundell, late of Moor Park, Rickmansworth, were efficient staging Superintendents; and Mr. J. Eley an obliging and energetic Hon. Sec.



WEATHER IN LONDON.—From the day on which our last issue went to press until Monday each day was showery, and notably on Friday, Saturday, and Monday rain fell in torrents. On Tuesday and Wednesday it was bright, fine, and far more seasonable.

— **WEATHER IN THE NORTH.**—Changeable as has been the weather for the fortnight preceding the 28th inst., it has on the whole been pleasant and seasonable. An occasional cold evening has occurred when the wind set into the east, but bright warm days have been frequent. Thunder has ever and again been recurring, with heavy local showers. Everywhere vegetation is luxuriant and crops promise well, though hay will be light.—B.D., *S. Perthshire*.

— **LATE CUCUMBERS.**—A few seeds may now be sown for late summer and early autumn fruiting. The plants from this sowing will be ready to place out in about a month. They do well in frames, and come in useful when early plants are exhausted. Plants in bearing must have attention in thinning exhausted growths, removing bad foliage, stopping, tying, and regulating the growths so as to have a succession of bearing wood. Add a little fresh soil to the surface of the beds from time to time, and let the atmosphere be moist all day; it is infinitely better than shading. With the roots active near the surface, induced by a light mulching of stimulating material and liquid manure once or twice a week, growth will be sustained. Syringe at closing time, and sprinkle the paths and walls in the morning and evening. Avoid too much moisture in dull weather, or the growths will be soft and the foliage liable to injury on a bright period ensuing. Close at 85° for increasing to 90°, 95°, or 100°, and only employ fire heat to prevent the temperature falling below 60° at night. Avoid overcropping, especially of young plants, and do not allow the fruits to hang too long, as these exhaust them and prevent in a great measure a good and continuous supply.—PRACTITIONER.

— **MAGNOLIA FRASERI.**—Upwards of a century ago this species was introduced from the Southern United States, but large specimens are now not often seen. It belongs to the deciduous section of the genus, and in English gardens makes a small bushy headed tree. As a foliage plant alone it is decidedly ornamental, the leaves being 10 inches in length by 4 in width, and varying in colour from bronzy green, when not fully developed, to a pretty pale green when mature, and bright brown before falling in the autumn. The flowers when young are greenish yellow, changing as they advance in age to cream. They are sweetly scented, and when fully expanded the largest measure from 8 to 9 inches across. It is seldom without flowers during the summer, but the greatest profusion are borne during May and June. At this season the effect produced by the different shades of young and more mature foliage, buds, half and fully expanded flowers, is very striking. A plant from 10 to 12 feet in height, by the same in diameter, is flowering freely in the Azalea garden at Kew.—W. D.

— **SOMETHING NEW IN FLOWER SHOWS.**—Under the above heading the "Westminster Gazette" says: "One of the happiest ideas in connection with the 'Children's Happy Evenings' is the Children's Geranium Club, which was started last year, and includes 700 youthful members, each of whom, early in spring, receives a small Geranium plant in a pot, with the object of rearing it for an exhibition to be held in the course of the summer. This exhibition is now fixed for Monday, July 11th, at Cambridge House, Camberwell, and the Duchess of Devonshire will open this unique flower show, and award the prizes to the successful young gardeners. Miss Edith Heather Bigg, the indefatigable Hon. Secretary of the Club, to whom the poor children of London owe a considerable amount of whatever 'sweetness and light' enters into their lives, has arranged with Messrs. Segar & Wills, of South Kensington, to carry out the floral decorations for this unique 'show,' and the children's home-grown Geraniums will form the fringe round such trophies of plants as supplied by the professional horticulturists. By the time the exhibition takes place the children will have had their Geraniums for nine weeks—that is to say, they have had ample time to tend and care for the plants, the best of which will receive the prize of a watch, while fifty-six other prizes will be awarded to the young gardeners who have been introduced to one of the most charming occupations in an almost ideal manner."

— **THE CUCKOO AND CATERPILLARS.**—In reply to Mr. W. C. Stone (page 480), I have seen cuckoos devour them by hundreds.—C. C. E.

— **GARDENING APPOINTMENT.**—Mr. Wm. Humphries, late of The Gardens, Knowsley Cottage, Prescott, Lancashire, has succeeded Mr. Randall as head gardener at Holme Lacy, near Hereford.

— **TO PREVENT THE SOOTY FUNGUS ON APPLES.**—There is no question, says an American authority, but Bordeaux applied at intervals of about two weeks from the middle of June until the middle of August will prove effectual. Under favourable conditions this fungus attacks most varieties of Apples and Pears, but on all it may be controlled by the use of Bordeaux mixture.

— **RUST OF STRAWBERRIES.**—The same authority states that this can be controlled somewhat by mowing the plants after picking and burning as soon as possible. This, however, is seldom completely satisfactory, and the best plan is to spray the plants three times with Bordeaux mixture, once before fruiting and twice after.

— **EAST COWES HORTICULTURAL SOCIETY.**—On Wednesday evening, the 22nd inst., Mr. G. Groves, J.P., C.C., in the chair, Mr. S. Heaton gave the second of a series of lectures, his subject being "A Collection of Vegetables." The subject was much appreciated, and resulted in a good discussion. A unanimous vote of thanks was accorded the lecturer. Mr. J. Hygate, The Briary, West Cowes, exhibited a fine seedling Petunia.

— **A NOVEL VINE SPORT.**—There is a very interesting Vine sport in one of the houses at the Tweed Vineyard. A spur on a Gros Colman Vine has for the last six years produced a growth that is as white as the paper I am writing on. It grows freely. When I saw it last week it was about 5 feet in length, with leaves nearly the normal size, and bearing a small bunch of equal whiteness. There is no other sport in the whole vineyard. The remarkable thing in connection with it is that it is always from the same spur, which does not produce a single green leaf. It is nearly half-way up a Vine that is in robust health.—DAVID THOMSON.

— **PADEREWSKI AND THE GARDENER.**—There is probably only one gardener in Britain who has had the privilege of being enraptured in his own cottage by a private performance of the world-famed pianist. The gardener thus honoured is Mr. M. Davis, Manresa Gardens, Roehampton. M. Paderewski, accompanied by the Governor of the Bank of England, recently called at Manresa to inspect the famous Vine. The distinguished visitor was both astonished and delighted, and as he is contemplating the erection of glass structures on a considerable scale, he asked many questions. He was evidently so satisfied with the advice imparted as to give Mr. Davis an opportunity to suggest that the greatest honour of which he could be the recipient would be a visit to his cottage and a trial of his daughter's piano. The invitation was accepted with alacrity, and, to quote Mr. Davis, "the result was glorious." So is the famous Vine which he raised a little more than a generation ago, and from which has been cut, during the past dozen years, considerably more than 2 tons of excellent Black Hamburg Grapes. The present year's crop is now being removed.

— **SWEET PEAS.**—We are told that a mistake made by many growers of these is in sowing too thickly. Taking this for granted, is it not a fact that sowing too early (say in February), as so many advocate, is likewise undesirable if not a mistake? I am led to this statement after a visit to Sir William Cook's gardens the other day at Wheatley Park, Doncaster, where I observed a magnificent row, 2 feet high. Mr. West, the gardener, informed me he did not sow till the second week in April, and then just under the soil, from which the plants emerge "in no time." For some reason or another he is not troubled with birds, but if there should be a thin spot in the rows he quickly fills the sides of the earthed-up rows with more seeds, and these naturally form a most desirable succession of bloom. Mr. West told me his Sweet Peas are invariably much earlier in bloom than many of his neighbours who sow two months earlier, and I may almost as well include myself, who sowed in February in my nursery, but my plants are not nearly as forward as his. Mr. West also values Duke of York culinary Pea for an early cropper.—ALBERT UPSTONE. [We have seen Sweet Peas from 4 to 5 feet high which have been flowering for some time. They were raised from seeds sown in the open ground last November, but near a wall having a southern aspect in the grounds of Farnham Castle, the historical residence of the Bishop of Winchester, to whom Mr. W. Dowding is the able gardener.]

LESSONS OF THE SEASONS.

SCREENS AND HEDGES FOR SHELTER.

AMONGST the lessons which a cold, wet, stormy May brought to us, the necessity for a provision of shelter, and a very general lack of it around gardens, orchards, and fruit plantations was certainly one of the most important. Not merely was it enforced by the scathing effect of cold blasts upon tender spring foliage, but even more by the earlier opening of blossom and the striking rapidity of growth in every sheltered nook and corner. To the provision of such shelter one has given much thought, in view of arriving at the best possible combination of efficiency with economy. Frequently in the laying out of new gardens has the excavation and removal of soil been turned to account for throwing up banks, which, planted with evergreens of free, vigorous growth, became barriers to wind more quickly than anything else, except the costly masonry of lofty walls. It is obvious that such banks may also be rendered ornamental by judicious planting.

In the preliminary survey for the garden at Hutton Castle for Lord Tweedmouth, it was found that the best site for the kitchen

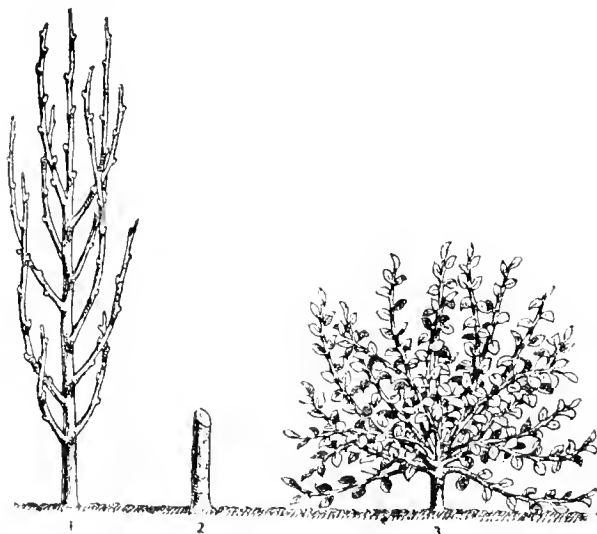


FIG. 101.—MYROBALAN PLUM AS A HEDGE PLANT.

References:—1, As received from the nursery and planted last November, 2 to 3 feet in height; 2, This represents No. 1 cut down immediately after it was planted; 3, Resultant growth this spring. The plant from which this sketch was made on May 11th had eighteen shoots.

garden was visible from the courtyard of the castle. Subsequently in the design I met the difficulty by planting out the kitchen garden with a wide belt of *Pinus austriaca* and Larch, which also would afford it shelter from north-east wind, and become an effective background to a ravine whose sides were to be planted with Thorns, Mountain Ash, Silver Birch, Crabs, Prunus, Laburnum, and Maples, with a semi-wild undergrowth of Gorse, Bramble, Briars, and Honeysuckle. Mention is made of this as an example of combining utility with ornamental effect, and of the special value of the Austrian Pine for shelter, its dense habit, vigorous growth, and hardiness rendering it especially suitable for such a purpose. Objection is sometimes taken to this tree for its sombre hue, but in this instance it was bound to prove effective as a foil to the neighbouring deciduous growth, and as imparting warmth and finish to a scene that would become increasingly beautiful with development.

The Scotch Fir, with its lighter grey foliage, is a much more general favourite, and I have used it in a design for a villa garden to be planted next autumn. The house is being built in a field near a public road, which is on the north side of it. The carriage drive will be made from the road to the house through a belt of Scotch Fir and Larch, with an undergrowth of shrubs, and a border of flowering trees and shrubs in front. This belt will sweep boldly round from the north to the east side, thus giving the requisite shelter and seclusion. The matter and manner of it is so self-evident that it strikes one as being almost too simple to mention, but then there is no getting over the fact that an adequate provision of shelter is so frequently forgotten in the laying out of gardens even in the most exposed situations.

Expense has very little to do with the matter. Failing means or convenience for wall, banks, or tree belts, a hedge is possible for everyone. Hedges of hard wood are in almost universal use by nurserymen as wind screens, such hedges being grown to a height of 10 or 12 feet in about six years. I have cause, from experience, to prefer the Myrobalan Plum for this purpose, by its dense and rapid growth, and have for the last six or seven years done what I could to advocate the planting of it around gardens, allotments, and fruit plantations. Easy enough is it to give advice in such a matter, but judging from results it appears impossible to induce amateurs to apply the few cultural hints which should render success a certainty. An object lesson was wanted, and in proof of the truth of the axiom that all things come to him who waits, my opportunity came last year, when I was requested to lay out and plant a fruit plot at the Midland

Dairy Institute. I may have something to say about this and other County Council fruit plots later on; now I have to deal with the hedge.

The site of this particular plot was so bleak that I decided to enclose it with a hedge of Myrobalan Plum, as the best means of affording speedy and efficient shelter, and moreover as an object lesson for those whom it is my duty to instruct in such matters. The soil for the plot had been carefully prepared during the summer, and the hedge was planted early in November. Healthy well-rooted plants, 2 to 3 feet in height, were obtained at the rate of 40s. per 1000. They were planted in a single row a foot apart, and cut down to about 9 inches immediately after the planting, the clean stumps so left having no prominent appearance of buds.

Quite delightful was it this spring to watch the growth, bursting out thickly on every stem. The hedge now (June 9th) is quite dense with growth, most of the shoots being upwards of a foot in length and full of vigour. Special mention is made of details, because of the advice usually given to plant 6 inches apart, and also because the plants are generally left unpruned, with the most unsatisfactory result of feeble growth and a wasted first year after planting. It is intended to have this hedge 12 feet high, and I shall be glad to have the opinion of other planters as to how long it will be in reaching that height under the requisite clipping to induce a compact dense growth. I saw stout shoots quite 6 feet long on a young hedge of this Plum last year. The small illustration (fig. 101) shows the start and progress of the plants above referred to.—EDWARD LUCKHURST.

A LITTLE MIXTURE.

THERE is generally a varied bill of fare in the *Journal of Horticulture*, in the form of heavy dishes and light relieves; but I thought I would send a little mixture of my own to meet the taste of diverse palates.

CRATÆGUS PYRACANTHA LELANDI.

Generally this fine berried shrub is grown on walls, where, with all its beauty, it assumes a somewhat formal aspect. Seldom is it seen growing in bush or pyramidal form, and yet in both cases when in bloom and in berry—but, of course, in the latter condition most, because of the rich colour of its fruit—it is most attractive. In the Coombe Wood Nursery of Messrs. Jas. Veitch & Sons there is the finest bush of this shrub I have seen. It must be from 10 feet to 12 feet through each way, and a day or two since was one mass of snowy whiteness. When in November next it is covered with berries it will be a grand object. It is to be regretted that this shrub has not been planted specially to form lawn specimens, for, whether in flower or in fruit, this Thorn is indeed a beautiful object.

HEDYSARUM MUTIJUGUM.

This is a somewhat rare hardy deciduous shrub which is just now in charming bloom at Coombe Wood. The habit is bushy, yet spreading, the foliage of the Vetch order, and much resembling that of the Dianthus. The flowers are purple Pea-like, and borne on spikes 6 inches long. It is a very charming denizen of the shrubbery, but should have a forward position. Evidently it likes a small infusion of peat, mixed with ordinary loam. *Magnolia Watsoni*, the best and most sweetly perfumed of all the deciduous varieties, is blooming finely, and for a foliage tree it would be difficult to find one so hardy and having such grand leafage as has *Magnolia Fraseri*, for the leaves are some 8 to 9 inches long, and broad yet pointed. This *Magnolia* should make a splendid lawn specimen.

LECTURES AT CHISWICK.

Those who were favoured to be present at the first of a course of four lectures on various subjects related to gardening, the first of which was delivered in the great vinery, Chiswick, by the Rev. G. Henslow, on "Vegetable Physiology," must have felt a species of homeishness, remembering the many pleasant gatherings of conference form which have been held in that fine building. But the larger portion of the gathering, some sixty in number, were young, including young men from the gardens from Kew and elsewhere, and the young lady students at Kew also. Mr. W. Marshall, of the R.H.S. Council, presided. Mr. Henslow is a most lucid lecturer, and readily makes plain, in simple and non-technical phraseology, what he wishes his hearers to understand. He mentioned at the outset, that as doctors of medicine dissected the human body, that they might understand its nature and requirements, so had botanists and vegetable physiologists, as it were, dissected plants, to have complete knowledge of them. Thus the seeds were found to consist of certain elements, that to enable them to germinate or reproduce their kind needed air, warmth, and moisture. Moisture changed solid starch into a soft or pap-like compound, capable of being utilised as food by the infant plant. That in development consisted of stem, which always grew to the light, and root or radicle, which either by force of gravitation or other cause invariably struck earthwards. Warmth generated growth, light gave chlorophyll or protoplasm, which became the green colouring of the stems and leafage, and was the vital force of the plant. Plants breathed or respired, as animals did. Much more did the lecturer tell his young audience, and added interest by numerous drawings of the conformation of roots and other parts of plants. A hearty vote of thanks was accorded at the close.

LABOUR-SAVING ARTICLES.

Any gardener doubtless is pleased when he can find in machines, or other articles, anything which lightens labour, or enables work to be

accomplished with greater facility. A few days since I saw in a hay-field at Surbiton an elevator secured to the tail of a waggon. The hay lay in windrows, and as the waggon was drawn up over them the elevator came behind and gathered it up, tumbling it into the waggon, where a couple of men built it up. I was not near enough to see whether the horses trampled on the hay, but if they did, and the hay also got well tossed about, then I fear the labour saved was lost in the deterioration of the hay. But the gardener does not want to haymake his lawns, and he has found the lawn mower a valuable aid to his labours, especially that in large gardens animals can be utilised to perform much of the work of mowing. When in Messrs. Veitch & Co.'s Coombe Wood Nursery recently, I was interested to observe the use by a man of one of the Planet, jun., double-wheeled hoes, which was being worked between rows of shrubs planted about 20 inches wide. The hoes were set to cover about 15 inches width. The progress made with the implement is not continuous like that of the horse hoe, but is intermittent. The worker has to force the implement forward by giving it a sharp push, say 12 inches, then draw it back and give a fresh impulse. In soft light soil it cuts up the weeds very well, but did not seem to sufficiently disturb them to their destruction. It is my opinion that an implement, both pulled and propelled, composed of a circular barrow armed with sharp teeth, made rapidly to revolve as the implement is propelled, would do the work of clearing the weeds to the surface more thoroughly.—A. D.

and nothing more, as to whether certain sites shall remain practically valueless, or be made valuable to the owner, tenant, manual workers, and vendors of the products of their judgment and skill. An unlimited quantity of water may flow from the chalk for centuries, and riches be washed away. It has been so; but the time comes when the right man arrives on the scene, and turns the long waste of water into a source of wealth.

He may do this in various ways, including the growing of Watercress, and this then is the crop which in certain localities is profitable alike to owner and tenant—the crop that is worth the while of a *ci-devant* worker with bricks and mortar to pay £65 an acre for the site on which he has taught himself to grow it; and, what is more to the point, by growing it and other crops, such as “Hot and Cold,” Cucumbers and Mushrooms, has in the course of a very few years indeed made himself independent of landlords by becoming one himself.

In the photographic illustration (fig. 102) is the first view of Watercress culture that has appeared in the *Journal of Horticulture*. It is only a patch of 2 or 3 acres, but as it gives an output of as many thousand pounds a year, is worth mentioning; but—and here comes the point—the

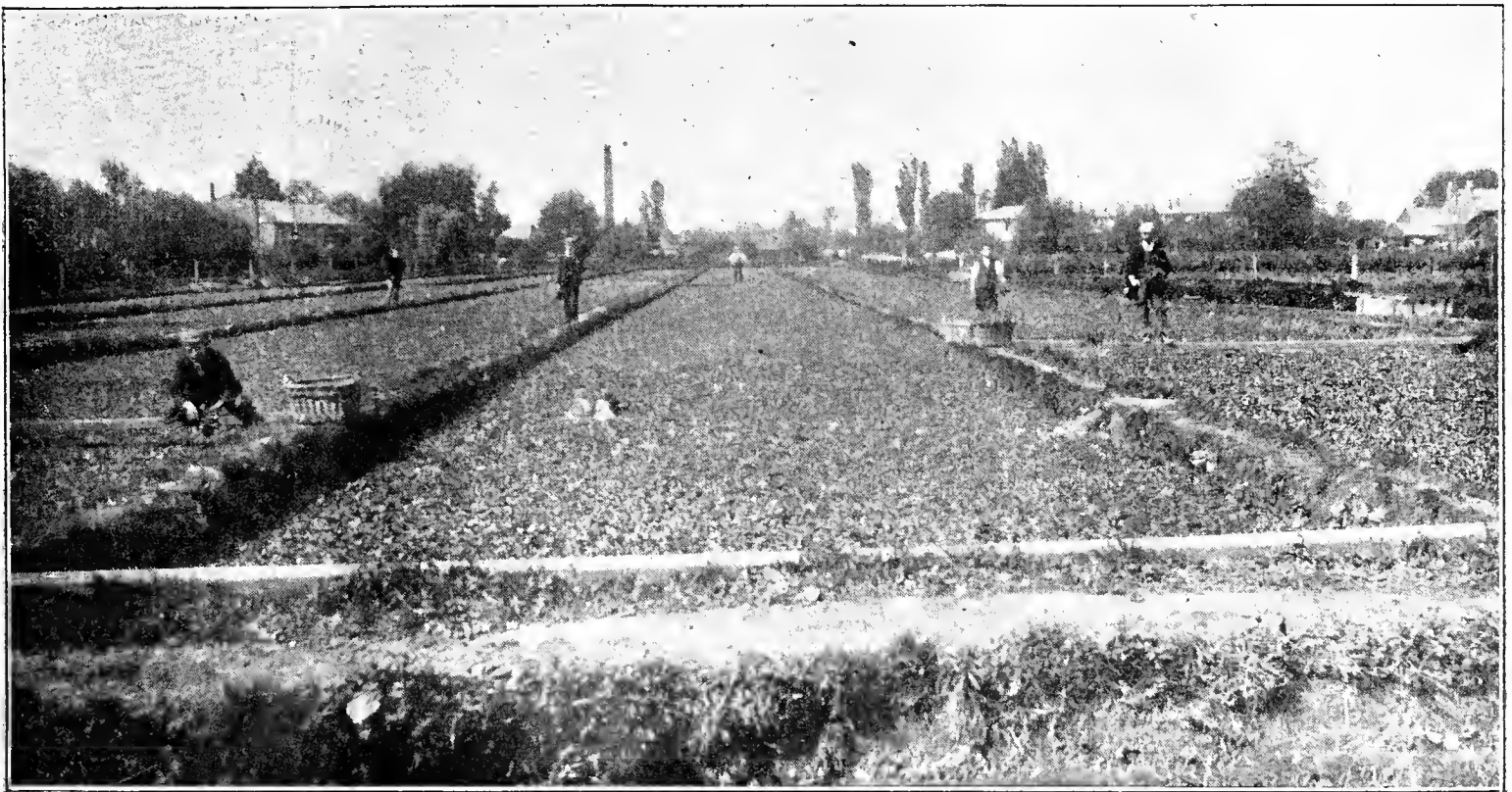


FIG. 102.—MR. NEWTON'S WATERCRESS CULTURE.

WEALTH IN WATERCRESS.

ON page 495, in the issue of the *Journal of Horticulture* of June 16th, at the end of an article on “Hot and Cold,” an outdoor crop was alluded to which enabled its cultivator, that thrifty man, Mr. William Newton, to grow at a rental of £50 an acre and leave something of a profit behind it. Various comments have been made on that statement “not for publication,” which is somewhat of a pity, for some of them were peculiar and amusing. Generally it may be said that if it were possible to concentrate the purport of the observations into about three words they would stand as follows, “I don't believe it.”

That is only what might be expected in these days when so many are striving and struggling to make a living from land under a rental of 50s. an acre instead of £50. No objection whatever is raised to the incredulity. It was only natural under the circumstances. At the same time only one slight alteration can be made on the question of veracity—namely, that the rental was, and is, in very fact, more than £60 an acre, plus rates and taxes; and still the tenant “lives,” perhaps as well satisfied with the contract as is his landlord, who is a good one, and not unknown in the horticultural world. He simply knows the value of water, and as a certain supply is an integral part of his property, he does not altogether let it run to waste.

A good deal is heard from time to time about the value of irrigation in some of our Colonies. It has also its value at home when the right men turn it to the best account, as circumstances may favour, and grow the right kind of crop in the right way. It is just a question of brains,

land had been very much of a bog for time immemorial, and worth little. Noticing a continuous stream of chalk water not far from its source, and finding by the thermometer during a sharp frost in winter a temperature of 37°, it was thought this liquid warmth might be turned to account. The land was therefore secured, and now gives an annual yield of some 300 tons of sweet and profitable “Watercreases.”

Why did it lay so long idle in comparison? The man with the thermometer had not arrived. He bought the land, formed the “beds,” and is now reaping the reward of his keen observation, judgment, and skill. He is “in the picture,” but like the modest man he is, as far in the background as possible, as the central distant figure of the work he has done so well.

Let it not be supposed that in what has been stated we are at the end of the work of this genuine working man. It will be a matter of surprise to those who know him best, if within the short space of a couple of years, and he continues to enjoy the blessing of health, he does not have a return of £10,000 a year by the sale of “Watercreases,” apart from his Cucumbers, his Mushrooms, his “Hot and Cold,” and other subsidiaries, which an earnest, zealous, sensible man who loves his work with an ardency that defies failure, continues to produce.

Enough is said at present, and a little more may perchance follow when the fates favour, on the reclamation of another swamp, and transforming it from absolute worthlessness into an area of productiveness such as is not common even in these times of earnest striving to make the best of the land.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—JUNE 28TH.

THE Drill Hall on Tuesday was packed with flowers of different kinds, those from the open ground, such as Pæonies and Delphiniums, being particularly conspicuous. Orchids were in good form, as were fruit and Tomatoes.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with Messrs. J. Cheal, J. H. Veitch, W. Poupert, A. F. Barron, M. Gleeson, W. Pope, A. Dean, W. Bates, W. J. Empson, G. Wythes, H. Balderson, F. Q. Lane, G. Norman, J. Willard, R. Fife, and T. J. Saltmarsh.

Mr. M. Gleeson, gardener to A. Von André, Esq., Stanmore, exhibited eight Queen Pines, averaging 5½ lbs. each. Mr. I. Rolfe, Stanford-le-Hope, Essex, staged some boxes of Tomatoes named Rolfe's Challenge. The fruits are a good shape and colour, and the bunches large.

Messrs. Jas. Veitch & Sons exhibited an early Cherry, Guigne d'Annonay, said to be eight or ten days earlier than Early Rivers. Messrs. T. Rivers & Son, Sawbridgeworth, exhibited six fruits of a magnificent new Peach Thomas Rivers. The fruits were excellent in shape and beautifully coloured throughout; it appears to be a decided acquisition.

Mr. Jas. Hudson, gardener to Leopold de Rothschild, Esq., Acton, showed Tomatoes and Cherries. In the former section Sutton's Abundance, Peachblow, Best of All, and Dessert were the best red varieties, while Veitch's Golden Jubilee and Golden Nugget were good yellows. The Cherries were grown on a south wall, and comprised the varieties Early Rivers and Bigarreau de Schreken.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. J. Fraser, C. T. Druery, H. B. May, R. Dean, W. Howe, J. Hudson, J. Jennings, T. Peed, R. B. Lowe, C. E. Pearson, H. S. Leonard, J. Fraser (Kew), J. Walker, C. E. Shea, T. W. Sanders, H. J. Cutbush, E. Beckett, G. Paul, H. Turner, D. B. Crane, H. J. Jones, C. Blick, and J. W. Barr.

Mr. C. Blick, gardener to Martin Smith, Esq., Hayes, Kent, exhibited a magnificent group of Carnations, all hailing from Hayes, which well arranged with Palms, Maidenhair Ferns, and Caladiums. The most prominent varieties were The Geisha, Nautilus, Trumpeter, Margot, Jane Seymour, Cecilia, Don Carlos, Mrs. Torrens, Mrs. de Satge, Albion, Lord Welby, and Gemma. Mr. Geo. Norman, gardener to the Marquis of Salisbury, had a handsome group of Malmaison Carnations; the blooms were very fine, and the plants remarkable for their healthy appearance; they were well staged with Palms and Cordylines.

Mr. B. R. Davis, Yeovil, Somerset, sent a very attractive exhibit of Begonias, both the double and single sections being well represented. A groundwork of Maidenhair Fern added gracefulness to the group. In the double varieties Mr. Stothert, (pale lemon), R. B. Parsons (silvery pink), Venus (pure white), Miss L. Gott (pale pink), Lucania (rich rosy pink), Salmon King, and Florence Nightingale were very fine and attractive, while the single section was well to the fore with a grand selection of seedlings, comprising colours ranging from pure white to yellow, orange, salmon, red, and crimson, the whole comprising a capital display of this popular flower. Messrs. H. Cannell & Sons, Swanley, had three trained plants of the Variegated Mallow (*Lavatera arborea variegata*) on show. The plants were well grown and beautifully variegated, clearly demonstrating the fact that this plant is suitable for decorative purposes.

Messrs. Jas. Veitch & Sons, Chelsea, exhibited a pleasing arrangement of Canterbury Bells, of the cup-and-saucer section, *C. Medium calycanthema*, comprising well-grown plants of various colours, ranging from pure white to the deepest blue. The same firm also had a large exhibit of Pæonies and Delphiniums. The former were well represented by such well-known varieties as Leda, Madame Miché, Mons. Deschamps, Gloire de Douai, Whiteley, Rubens, vittata, and Pottsi superba. In the latter section Bach, P. Laird, Lucifer, Lord Chas. Beresford, Lord Balfour, and Mr. Edgar Wilde were most conspicuous. The whole group was edged with a border of *Tropæolum polyphyllum*.

Messrs. Paul & Son, Cheshunt, exhibited a choice collection of Pæonies, varied in colour and beautifully arranged. The new single Rose, Royal Scarlet, so much admired at Bath, was well represented; the colour is intense, and its freedom of flowering beyond dispute. It will be a grand addition to this popular class of Roses. Fine blooms of the Rev. Alan Cheales, a new Hybrid Perpetual, were on view; also a very artistic group of single Begonias, lightly arranged with Maidenhair Fern. The best Begonias were Lady H. Mosley, Salmon Queen, Miss A. Stewart, Earl Grosvenor, Major Bourke, Mrs. Dudley Leigh, Lady Howe, Lady Lonsdale, Seymour Lucas, and Mrs. H. Fraser. Messrs. Sutton & Sons had a meritorious display of double Petunias, beautifully fringed and in a great variety of colours; also an attractive display of their new *Gladiolus Queen of the Roses*, a very delicate blush pink, a variety that must become popular.

Messrs. R. Wallace & Co., Colchester, exhibited a good collection of Lilliums, Irises, Calochorti, Pæony albiflora striata, Ixias, and Brodiaeas. The Lilliums comprised *L. umbellatum* incomparable, *L. u. erectum*, *L. Thunbergianum* brevifolium, *L. Szovitzianum*, *L. auratum* platyphyllum, *L. a. Wittei*, and *L. a. rubro-vittatum*. Messrs. Kelway, Langport, exhibited Pæonies, Delphiniums, Gaillardias, and Eryngiums. The most notable Pæonies were Kitty Queen, Peter the Great, Chiron, Masterpiece, Cherita, Princess of Wales, and Medusa; while the Delphiniums comprised fine spikes of Alfred Henderson, Gilbert, Imperial Majesty, True Blue, King of Delphiniums, Horace, and Oceana.

Messrs. Barr & Sons, King Street, Covent Garden, staged one of their

popular displays of hardy flowers. The chief features were a collection of single and double Pæonies, Irises, *Inula glandulosa*, Delphiniums, *Heuchera sanguinea*, and Lilliums of the Thunbergianum type. Mr. F. G. Foster, Brockhampton Nurseries, Havant, had a very attractive exhibit of Sweet Peas, which were very fine both in size and colouring, interspersed with Maidenhair Ferns. The chief varieties were Maid of Honour, Prima Donna, Chancellor, Creole, Celestial, Mrs. Eckford, Countess Powis, Grisel Hamilton, Salepian, Meteor, and Splendour. Messrs. Balchin & Sons, Hassocks Nurseries, Brighton, had an exceptional exhibit in some splendidly grown plants of *Phœnocomia prolifera* Barnesi. The plants were remarkably healthy and well flowered.

Messrs. Wm. Paul & Sons, Waltham Cross, presented a fine display of Roses in pots and baskets. The standard forms grown in pots were very good. The most prominent varieties were Madame Hoste, Madame Pernet Ducher, G. Nabonnand, Niphotos, Enchantress, and Medea. The cut blooms were very fresh and in good condition. The varieties well shown were Victor Verdier, Violette Bowyer, Grace Darling, La Fraicheur, Madame P. Perny, Empress Alexandra of Russia, White Lady, Queen Mab (grand), Papa Gontier, Caroline Testout, Madame Bois, and Marie Van Houtte. Mr. H. B. May, Dyson's Lane Nurseries, Edmonton, staged an interesting collection of Adiantums in ninety species and varieties. The most notable were *A. amabile*, *A. Veitchi*, *A. fasciculatum*, *A. cuneatum* grandis, *A. farleyense*, *A. plumosum*, *A. Hemsleyanum*, and *A. speciosum*.

Mr. E. Beckett, gardener to Lord Aldenham, exhibited a very large artistic group of Palms, brightly coloured Dracænas, Crotons, and other bright foliage plants, dotted with Lilliums in variety, Carnations, Tuberoses, Odontoglossums, and Gladioli, with a groundwork of Ferns, Caladiums, Asparagus, Isolepis, and Gypsophila paniculata, the whole having a very bright and pleasing effect. Messrs. J. Peed & Sons, Norwood, staged an attractive group of Carnations, such as J. W. Christmas, Primrose Queen, Miss Measures, R. H. Measures, and Malmaisons, arranged with Kentias and *Anthericum variegatum*. Messrs. Wm. Cutbush & Son, Highgate, occupied a large space with a group of Carnations, artistically arranged with Ferns, Bamboos, Cocos Weddelliana, and other Ferns. The chief Carnations were Churchwarden, Princess of Wales, Blush Malmaisons, the new Prime Minister and Mrs. C. H. Wilson. Messrs. Geo. Jackman & Son, Woking, occupied a large table with hardy flowers. The chief features were Sweet Peas, Campanulas alba grandiflora and *C. urticæfolia plena*, Pyrethrums in variety, Delphiniums, Pinks, and a large variety of others.

In competition for the Sherwood cup, a group of annuals and biennials, Messrs. Jas. Veitch & Sons were the only competitors. The collection staged comprised splendid bunches of Stocks, Sweet Williams, Antirrhinums, Campanulas, Sweet Sultan, Sweet Peas, Schizanthus in variety (beautifully grown), Centaureas, Petunias, and Rhodanthes. In the centre of the exhibit some huge glasses filled with these flowers attracted great attention. Leopold de Rothschild, Esq., Acton, had a very interesting exhibit of nine varieties of Water Lilies, comprising such beautiful forms as *Nymphæa stellata*, *N. Ellisiana*, *N. lucida*, *N. Marliacea chrometella*, and *N. Marliacea rosea*.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, de B. Crawshay, H. M. Pollett, J. G. Fowler, H. Little, F. Sander, A. H. Smee, H. J. Chapman, W. H. Young, E. Hill, J. Jaques, W. Cobb, H. Williams, S. Courtauld, T. B. Haywood, and H. Ballantine.

Orchids from Messrs. J. Veitch & Sons, Chelsea, were of great beauty and interest. The diversity was very pleasing, while it is needless to say the quality was of the best. Amongst the most conspicuous were *Phalænopsis Ludde-violeacea*, *Cypripediums*, *Cattleyas*, *Lælias*, *Lælio-Cattleyas*, *Disas*, *Thunias*, *Oncidiums*, *Dendrobiums* and others. Messrs. H. Low and Co., Bush Hill Park, Enfield, sent a handsome group of *Cattleyas* with one or two other Orchids intermixed. Messrs. B. S. Williams & Son, Upper Holloway, staged a small but effective group of Orchids, comprised mainly of *Cattleyas*, but including a few *Cypripediums*, *Odontoglossums*, and others. Messrs. S. Mobbs & Ashton, Southgate, arranged a bright exhibit of Orchids, the plants being well flowered.

MEDALS.—The following awards were made by the Committees for the several exhibits noted above:—Fruit Committee: Silver-gilt Banksian medal to Mr. J. Hudson, and silver-gilt Knightian medal to Mr. M. Gleeson. Floral Committee: Silver-gilt Flora medal to Mr. E. Beckett; silver Flora medals to Messrs. Kelway & Son, Cutbush & Son, J. Veitch and Sons, Ltd., and G. Norman; silver-gilt Banksian medals to Messrs. C. Blick and H. B. May; silver Banksian medals to Messrs. B. R. Davis, J. Peed & Sons, R. Wallace & Co., Paul & Son, Barr & Son, J. Hudson, and W. Paul & Son; and bronze Banksian medals to Messrs. G. Jackman & Co., G. Foster, and H. Cannell & Sons. Orchid Committee: Silver Flora medals to Messrs. H. Low & Co. and J. Veitch & Sons, Ltd.; and silver Banksian medals to Messrs. B. S. Williams & Son and S. Mobbs and Ashton.

CERTIFICATES AND AWARDS OF MERIT.

Begonia Florence Nightingale (B. R. Davis).—A pure white double variety of the best quality (award of merit).

Begonia Thunderer (B. R. Davis).—This is a grand double variety, with glowing scarlet flowers (award of merit).

Campanula mirabilis (G. Jackman & Son).—A charming variety, with pale blue upright flowers, which are abundantly produced (first-class certificate).

Carnation Lord Welby (C. Blick).—A grand flower. It has size, substance, and rich red colour (award of merit).

Carnation Margot (C. Blick).—The petals of this are of great breadth and thickness. The colour is rich rose (award of merit).

Carnation Baldwin (C. Blick).—One of the grandest pink varieties. It is large and well built (award of merit).

Carnation Mrs. de Satge (C. Blick).—A good scarlet, with large good shaped flowers (award of merit).

Cattleya Adela (J. Veitch & Sons). A hybrid resulting from a cross between *C. Percivaliana* and *C. Trianae*. The sepals and petals are rich rose, with a purple suffusion, the beautiful lip being crimson paling towards the margins (award of merit).

Cypripedium P. Ansoni (H. Low & Co.).—A fine form after the style of *Rothschildianum*. The petals are cream with immense brown spots, and are slightly drooping. The dorsal sepal is creamy white with brownish crimson veins. The pouch is pale claret (first-class certificate).

Cypripedium Mrs. Reginald Young (H. Low & Co.).—This is a handsome Orchid, with long, drooping, wavy petals, the colour of which is cream with large bright claret spots at the base, and dull claret about 6 inches from the tips. The dorsal sepal is bright yellowish green and glowing crimson brown. The pouch is pale orange claret (first-class certificate).

Digitalis purpurea grandiflora (J. Veitch & Sons).—The varietal name of this Foxglove tells its colour. The flowers are of good size (award of merit).

Gaillardia W. B. Child (Kelway & Son).—This is a splendid variety with brilliant yellow flowers (award of merit).

Gladiolus Queen of the Roses (Sutton & Sons).—This is a handsome and very floriferous *Gladiolus* that should become exceedingly popular. The colour is soft rose (award of merit).

Iris Juncea humida (R. Wallace & Co.).—A lovely form. The colour is bright yellow save for occasional brown veins (award of merit).

Lælio-Cattleya Canhamiana Joyce Wigan (W. H. Young).—A superb variety. The sepals and petals are delicate rose, deepening to purplish rose towards the margins. The fine lip is purplish crimson (award of merit).

Lilium Marhan (C. G. Van Tubergen).—A handsome *Lilium*. The flowers are numerous, and of a buff colour, with numerous bright brown spots (first-class certificate).

Lupinus polyphyllus Somerset (Kelway & Son).—A fine yellow variety of the well-known type (award of merit).

Nasturtium Queen of Tom Thumbs (Watkins & Simpson).—The deep-coloured flowers and the silver variegated leafage of this variety are very effective (award of merit).

Peach Thomas Rivers (T. Rivers & Son).—An immense Peach of excellent appearance. The flush of colour extends over almost the whole surface. The flavour is very good, but the fruit tested was slightly stringy (first-class certificate).

Philadelphus Lemoinei (Barr & Son).—An extremely floriferous variety with pure white flowers (award of merit).

Rose Rev. Alan Cheales (Paul & Son).—A fine H.P., with bright red, well-formed flowers. The reverse of the petals is silvery (award of merit).

Rose Una (Paul & Son).—A grand single Rose, with large cream-coloured flowers (award of merit).

Stanhopea Rodigasiana (W. H. White).—A remarkable Orchid. The broad thick lower sepals are pale yellow, with large and numerous brown spots, the upper sepal being the same colour without the spots as are the petals. The lip and column are densely spotted with rose, the throat being white. The flower is borne on a spike some 10 inches in length (first-class certificate).

FLOWERS AND GREENERY FOR MARKET.

SOME three or four years have elapsed since I looked in upon those veteran market growers, Messrs. Hawkins & Bennett, Twickenham, whose great forte so long has been the production of Zonal Pelargonium flowers for market sale, and some other products also. So far they have been enabled to resist the grasp of the builder, but they are gradually becoming enclosed by houses, and in a few years the nursery may have to be removed elsewhere. In the meantime they go on growing Pelargoniums, Lilies of the Valley, Roses, Stephanotis, and other specialities with entire equanimity.

Very long house after house is full of plants, old and young, of Pelargoniums. The best doubles for their purpose are F. V. Raspail, and that wonderfully fine sport Duke of Fife, for which the firm obtained a "F.C.C." some six years since. Of all the sports that have come from Raspail none is finer than this one. The new salmon coloured King of Denmark is there also, but so far on trial. The ordinary white double is Cannell's Silver King, a sort of white Raspail, but holding the same relation to it as Duke of Fife does. P. Lemoine is a superb pure double white, and is highly favoured by the firm for their purposes.

The most widely grown singles are H. Jacoby, J. Gibbons, West Brighton Gem, and that rich scarlet De Lesseps. A singularly lovely rosy salmon is Lady Chesterfield, the most pleasing of that section of colour I have seen. Of ordinary pink colour Constance is the favourite, whilst of whites Aurelia, a good winter white, but colours pink when exposed to the full light in the summer, Queen of the Belgians, and a pure and steadfast seedling of their own, are most generally grown. Flowers of all these singles are fixed with a drop of gum before they are bunched for market. Some plants of Madame Crousse Ivy-leaf are grown too, but these are more in demand for boxes or baskets than for furnishing cut flowers.

LILIES OF THE VALLEY.—Now over, are very finely grown, the large Victoria form being the only one. The beds are some 7 to 8 feet wide and very long. There are large quantities of moveable backs,

fronts, and ends, that can be fixed as needed over the beds, and on them be laid lights, or in some cases stout wires are trained from end to end, and on these canvas coverings are laid to furnish protection in the spring from white frosts. The beds are lifted, broken up, and replanted every eighth year. Then the whole of the old soil is removed, and it is replaced by fresh, and the best crowns are selected and replanted some 2 or 3 inches apart all over the surface. Top-dressings of manure are liberally given in the winter, also from time to time soakings of liquid manure. The culture is indeed of the very best, and the flower product of the finest.

STEPHANOTIS FLORIBUNDA.—This has been grown in a long low house for many years. The house is about 6 feet wide, and seven wires, each 100 feet long, are filled with luxuriantly flowered wood, covering them. The plants are chiefly in large slate tubs or boxes, the sides and ends being bolted together. When, each other winter, it is needful to add fresh soil, the bolts are removed, the sides and ends taken away, a large portion of the soil is then forked off, the slate sides and ends replaced, and new soil added. In that way the plants continue from year to year to grow and bloom profusely. *Hoya carnosa*, in large pots in another house, also grows profusely, and is carrying myriads of clusters of wax-like flowers. These, too, have a value in the market, as they sparkle so in the strong artificial light now so common in places of resort.

MAIDENHAIR FERNS.—Always the popular *Adiantum cuneatum* is another strong feature. There are apparently thousands of plants in 9-inch and 10-inch pots, from which fronds that have become well hardened are constantly being gathered. Then the plants get a period of rest and come on again. Some that seem to need renovation are broken up into several pieces and placed in smaller pots. In such an industry the greatest care must be taken to have not only a constant but also an abundant supply. Maidenhair fronds keep well on the plants, so that if the demand for a time runs low there is no waste. It would, however, be a serious misfortune did a sudden demand find the firm unable to meet it.

SMILAX.—This is now grown very extensively. There are hundreds of pots of this useful climber standing on beds in the houses in cross rows. Wires are strained tightly across close on the pots, whilst others run across 4 feet above. From wire to wire lengths of twine are fixed, and up these the Smilax growths run in wonderful profusion. These lengths are cut when well furnished, and sent to market. They are produced in about three weeks. Smilax is easily raised from seed, and when old plants are exhausted fresh ones are ready to take their places.

A few varieties of *Begonia Rex* are grown—one, a bronzy leaf, and another, having pretty spotted leaves, to sell as plants for vase decoration in rooms. Roses are chiefly grown against walls, outdoors; and there is a large stock of Chrysanthemums in pots, preparing for autumn and winter blooming. Naturally in establishments of this description something or other must always be at hand to market.—A. D.

LEEDS HORTICULTURAL SHOW.

JUNE 28TH.

THE Leeds Committee is for the first time for many years to be congratulated in getting together a really good show under specially favourable climatic conditions. Last season, after a lapse of about ten years, a spirited attempt was made to resuscitate what had promised to become one of the leading shows in the North, and although a good show was the result, the weather then was far from satisfactory, and the venture a financial loss to the Committee. With characteristic determination not to be defeated at the first attempt, another effort has been made, which only requires the support of the inhabitants of Leeds to make a grand success. The show in all its features is a marked improvement on last year's venture.

The fruit classes were well filled, and in most cases the competition was close. Mr. Goodacre, gardener to the Earl of Harrington, was first with a good Melon, Apples, Strawberries Royal Sovereign, Figs Brown Turkey, Nectarines Violette Hâtive, Peach Chancellor, well finished Black Hamburg Grapes, and especially good bunches of Cannon Hall Muscat. Mr. McIndoe, gardener to Sir Jos. Pease, was second, showing good Hamburg and Muscat Grapes, and a fine Melon of the Empress type. Mr. J. Tullett, gardener to Lord Barnard, Raby Castle, was third.

For three bunches of Black Hamburg Grapes, Mr. Goodacre was again first. Mr. W. Nicholls was a good second, and Mr. A. Large, Ripley, third. For three bunches of black Grapes, any other variety, Mr. F. Nicholas, gardener to the Marquis of Zetland, was first with well finished Madresfield Court, Mr. McIndoe second, and Mr. Easter, gardener to Lord St. Oswald, Nostell Priory, both exhibiting the same variety. For two bunches of white Grapes, Mr. Nicholas won with superbly finished Buckland Sweetwater, Mr. A. Large second, and Mr. McIndoe third with Muscat of Alexandria.

For six Peaches Mr. Goodacre was first with fine examples of Noblesse; Mr. Alderman, gardener to J. P. Ellis, Esq., second. For six Nectarines Mr. Goodacre was first with superb Lord Napier; Mr. Alderman second; and Mr. Bennett, Market Drayton, third. The first prize for scarlet-fleshed Melons was won by Mr. F. Nicholas; Mr. W. Abbey second; and Mr. Goodacre third. For green-fleshed Melons Mr. McIndoe was first; Mr. Goodacre second; and Mr. W. Nicholls third. For a dish of Strawberries Mr. Alderman was first with Royal Sovereign; and Mr. Lawton, gardener, Welton House, second, with fine examples of Gunton Park.

Groups of miscellaneous plants arranged for effect in a space of

250 square feet. Four exhibitors competed, the first three being remarkably fine arrangements. Messrs. Simpson & Sons, Selby, secured first place with a well balanced and effective arrangement, Mr. Townshend was a capital second, whilst Messrs. Sharp & Co., Almondsbury, were placed third.

The lesser group of 120 square feet, for amateurs resident within seven miles of Leeds, showed good quality and taste in arrangement, Mr. Fairfax Rhodes, Potternewton House, securing first honours; second, Mr. Eastwood, gardener to Mrs. Tetley; third, Mrs. Kitchen, Eller Close, Roundhay. For six stove and greenhouse plants in bloom, Mr. F. Nicholas secured first place with *Pimelea mirabilis*, *Clerodendron Balfourianum*, *Erica Cavendishi*, *Anthurium Scherzerianum*, *Franciscea calycina major*, and *Aphelaxis rosea*. Mr. Sharp was second and Mr. J. Sunley third. For six ornamental foliage plants Mr. Nicholas was first; Messrs. Simpson & Son second; Messrs. Sharp & Co. third. For a single specimen foliage plant Mr. Townshend was first with a magnificent *Cycas revoluta*; Mr. Walker second, and Messrs. Simpson & Son third. For three Crotons Mr. Nicholas was first, Messrs. Simpson second, Messrs. Sharp third.

Roses made a remarkably fine display. Messrs. Dickson & Sons, Newtownards, were easily first for forty-eight distinct varieties. Their chief examples were Marquis Dufferin, A. K. Williams, Lady M. Fitzwygram, Mons. E. Y. Teas, Mrs. R. Sharman Crawford, Bessie Brown, La Rosière, Duke of Edinburgh, Marquis de Castellane, Tom Wood, La France, Jeannie Dickson, Madame H. Jamain, The Bride, Avoca, Muriel Graham, Mrs. W. J. Grant, Liberty, Souvenir de S. A. Prince, Niphetos, Countess of Caledon, Général Jacqueminot, and Rubens. Second, Messrs. Harkness & Son, Bedale; third, Messrs. G. and W. H. Burch, Peterborough.

For twenty-four varieties Messrs. Dickson & Son were again first, and well ahead with varieties similar to the foregoing. Messrs. Harkness second; Messrs. F. & A. May third. For twelve Tea-scented Roses Mr. Burch was first with Niphetos, and Messrs. Harkness & Son second.

For twelve bunches of stove and greenhouse flowers Mr. Nicholas was first and Mr. McIndoe second. Bouquets were superb, Messrs. Perkins and Sons showing in their usual style for first honours; Mr. A. Hall, Harrogate, was second. In the same order honours fell for exceedingly tasteful basket arrangements. Table plants, Gloxinias, exotic and hardy Ferns were fine fresh examples. The lion's share of prizes fell to Mr. Eastwood for superb examples of Pelargoniums and Fuchsias.

In the miscellaneous exhibits the enterprise of Messrs. Clibran & Sons was conspicuous by a magnificent collection of herbaceous Peonies, among which Duke and Duchess of York, finely perfumed; grandiflora rosea, Rubens, and Snowdrift stood out remarkably fine. Mr. A. Hall, florist, Harrogate, showed tasteful arrangements in wreaths and ladies' sprays; while Messrs. Webb & Son, Stourbridge, exhibited a collection of Sweet Peas, Delphiniums, Pyrethrums, Tomatoes, and Cucumber Stourbridge Gem.

URSINIA (SPHENOGYNE) SPECIOSA.

THE above is the name of "Devonian's" specimen, and we think your plants are flowering unusually early. This may be accounted for by your genial climate, for as a rule this annual blooms from July onwards. No, it is not new, for it was introduced under the name of *Sphenogyne* so far back as 1837. The woodcut (fig. 103) will convey an idea of the value of this hardy annual for border decoration. The seeds may be sown in the open ground along with the other annuals in early April; all that is required afterwards is simply thinning the seedlings to 6 or 9 inches apart, which is quite near enough, as they have a branching habit, each forming a well-shaped bush literally covered with its bright yellow flowers, the effect of which is greatly enhanced by the dark purple brown spot at the base of the rays, and the rich dark disc. The variety *sulphurea* is not so beautiful as the type, the flowers being pale sulphur. *U. anthemoides* is a near ally of the above, differing in having a deep purple colour on the under side of the rays, smaller flowers, and more finely cut foliage.

THE YOUNG GARDENERS' DOMAIN.

BUSH MIGNONETTE.

THE most useful form of training Mignonette is, I think, in the form of a bush. The seed should be sown about the middle of February in clean, small, well-drained pots, using a compost of two parts loam and one of leaf soil, with a little silver sand added. Three or four seeds suffice for each pot. Well water with a fine rose, and place in a warm pit. As soon as the plants are large enough to handle, thin them out, leaving the strongest one as near the centre as possible. In a short time they will gain strength, and when the plants have well filled the pots with roots they should be transferred to 5 and 6-inch pots, using at this stage a mixture of turfy loam, leaf soil, and well-decayed manure in about equal parts, with a free admixture of sand and small charcoal, potting rather firmly, and shading from bright sunshine. The shoots must be pinched at intervals to produce a branching habit. By the beginning of June the plants should be ready for shifting into 8 and 9-inch pots. When the

roots are working freely in the new soil the plants may be arranged on the north side of a wall. The flowers ought to be removed as they appear till about the middle of September. As the nights grow cold place them under glass in a temperature of about 55° at night. They should never be allowed to receive the slightest check, but kept continually growing, watering very carefully, and syringing in bright warm weather. —S. S.

CYCLAMEN PERSICUM.

To obtain a good supply of blooms from November to March the following is the mode of culture practised. Our main sowing is made in August in clean thoroughly drained pans filled with light leafy soil. The seed is covered lightly, and the pans placed on a hotbed about 80°. The seed germinates irregularly, and mistakes have been made by



FIG. 103.—URSINIA (SPHENOGYNE) SPECIOSA.

emptying seed pans too soon. As soon as large enough the plants are carefully placed into thumb pots and arranged on a shelf near the glass in a house having a temperature of 65° to 75°. The syringe is used on favourable occasions. Shading is attended to, and the plants given larger pots as required. More air is afforded as the season advances, and by June the plants are ready for their final shift into 5-inch pots.

The compost employed consists of peat, sweet leaf soil, and loam in equal parts, with the addition of sharp sand and crushed oyster-shells. The potting is done without the use of the rammer, and in such a way that the base of the corm rests on the surface of the soil when the work is finished. This is important in order that watering may be properly done. The plants are then arranged on ashes in cool frames, and syringed thoroughly, especially on the under sides of the leaves, until the flower buds appear. The regular syringings help to keep down that most troublesome pest of the Cyclamen, the white thrips, which attacks the crowns, and is responsible for most of the "blindness" which occurs in the plants.—T. P.

(To be continued.)



FRUIT FORCING.

Vines.—*Early Forced Houses.*—When the Grapes have been cut the Vines should be thoroughly syringed to cleanse them of dust and insect pests. The worst of these is red spider, which in its countless numbers so impoverishes the leaves that they fall prematurely, and the buds are then so ill-formed and nourished that the growths from them in the following year are weak and the fruit poor. Moderate extension of the laterals should be encouraged from the extremities only. Vines must not be allowed to go to rest prematurely, or they will make a second growth late in the summer. Ventilate to the fullest extent day and night, and if the roof-lights can be removed all the better.

Grapes Colouring.—Free circulation of rather dry warm air contributes to high flavour and finish. The temperature should be maintained at 70° to 75° by day, and 60° to 65° at night; with sun heat a temperature of 85° or 90° may be allowed. Vines struggling with a heavy crop should not be subjected to so high a temperature as those which are luxuriant and carrying no more fruit than may be considered a fair crop, but rest must be afforded them at night by allowing the temperature to fall to 60°. Afford a thorough supply of water to the border, mulching with an inch or so of short manure. Outside borders in most cases have been sufficiently moistened by the recent rains. Moderate air moisture is necessary for the foliage, damping down in the morning and afternoon, but a close atmosphere is fatal to colour and bloom, and is likely to induce "spot" in the tender-skinned white Grapes, such as Duke of Buccleuch and Muscat of Alexandria.

Late Houses.—Thinning the berries will in most cases be completed, though it may be desirable to go over the bunches again by the removal of superfluous or stoneless berries. For securing highly finished berries it is necessary to thin them well, especially in the interior of the bunches, leaving the large-berried varieties, such as Gros Colman, not less than an inch apart. Oval berries do not require quite so much room, but all must be free to swell without wedging, and yet the bunches should retain their shape when dished. An array of footstalks is not pleasing. Do not spare the bunches where there are too many, but reduce them to the number which the Vines can finish satisfactorily. Over-burdened Vines never finish their fruit well, and it will not long keep sound.

Firing and Ventilating.—When the Grapes are thinned they swell rapidly up to stoning, and then remain stationary for a month or six weeks. Cold nights render fires still necessary, and it is the reverse of economical to let them out and lose size in the Grapes, and then have to fire hard later in the season, when the sun has less power to ripen the fruit. All late Grapes require a high temperature and a long season, with abundant nutriment at the roots and a plentiful supply of atmospheric moisture. Maintain the night temperature at 60° to 65°, and 70° to 75° in the daytime artificially. Admit a little air early in the morning, but never to lower the temperature and increase it with the rising heat, which should go up to 85° or 90° from sun heat, and the longer that is kept the greater progress the Grapes make. Reduce the ventilation when the sun heat wanes, closing the house by the time it recedes to 85°, well damping the paths then, and the heat may rise to 90° or 95° afterwards with benefit. It is always desirable to make the most of sun heat, and aid it with artificial warmth. A little air at the top of the house at night will allow the vitiated atmosphere to change, and the foliage to become dry in the morning by the time the sun acts powerfully upon the structure. If care is taken to increase the ventilation with the advancing sun scorching will be avoided.

Watering.—The warm rains of summer, charged with ammonia and nitric acid, give an impetus to growth, and watering inside borders with the water collected in tanks on rainy days acts similarly. The water dislodges the air and admits fresh, as well as cleanses the soil from impurities where the drainage is thorough. After properly moistening the borders, follow with liquid manure or a top-dressing of fertiliser washed in where the Vines are carrying heavy crops. Sweetened horse droppings are suitable for surfacing heavy soil, farmyard or cow manure answering better for light soils. Do not apply more than an inch or two, and then add to it from time to time so as to keep that thickness, and so supply nutriment regularly. To let the border get dry and so remain at the surface causes the roots to strike down in quest of moisture, and the Grapes often finish badly in consequence.

Regulating the Growth.—Avoid an excess of foliage, and have all the leaves fully exposed to the light. Do not, however, occupy all the space at once with laterals, but leave room for successional growth for encouraging root action. The foliage should be rather thinner in the case of white Grapes than black. Muscats, especially, need the foliage and Grapes well exposed to the light. Avoid large reductions of foliage at one time, the merest point should be taken out of laterals and sub-laterals. Vines extending may be allowed to make as much lateral extension as practicable, but the principal leaves, that nourish the buds to which the Vines are to be pruned, must not be interfered with, affording them full exposure so that they may elaborate the sap, transmit the assimilated matter to the buds, and store food in the adjacent wood. Lateral growth is useful in assisting the canes or main rods to thicken, and this laying on of new layers of wood is important, as by it sap is readily transmitted from the

roots to the growths. Such extension, however, must be kept subordinate to, and not allowed to interfere with, the principal growths, or prevent the access of light and air to the main leaves.



STRAY SWARMS.

MANY stray swarms of bees have been reported from various parts of the country, several swarms having been seen on the wing far away from any apiary. We procured a small cast that was observed hanging from the branch of a tree on the outskirts of a wood. The bees are very black and evidently Punics; these have been isolated in case they have come from a diseased stock.

We have been asked on several occasions how to prevent the absconding of swarms, which more often happens in connection with straw skeps than with the moveable frame hive. In the former, the bees are often restricted for room, the brood nest is small and altogether out of proportion to the laying powers of a young active queen. What is the result? Queen cells are formed, and the first fine day that comes out will come the swarm, flying away without anyone being the wiser. In the case of swarms headed by old queens, they will usually cluster within a few yards of their hive. But with young queens it is altogether different, as when they once get on the wing they will often fly a long distance before alighting.

If bees are kept in frame hives they usually have more space, and are much more under control than when kept in small hives of any description. The remedy is the same in each instance—provide room in advance of the bees' requirements, attend to shading and ventilation, and swarming will be reduced to a minimum.

Swarming is a necessity when bees are kept solely in straw skeps, and if the bee-keeper is not an adept at swarming bees artificially, which, by the way, is such a simple operation that it is surprising anyone should run the risk by allowing the bees to have their own way, when they will probably fly to some hollow tree or an old building and be lost. Such swarms are more common than many people imagine. Within the past few days we have destroyed a strong colony that had had possession of a tree close to a public thoroughfare. The tree was large, and to all appearance sound, and as the bees had become a nuisance to the general public, the hole by which they obtained an entrance was filled with cement, and the bees suffocated.

SWARMING BEES ARTIFICIALLY.

All will depend on the nerve of the operator, his quickness of sight, and his judgment as to the number of bees in the hive, whether the operation will be a success or failure. In the first place he must know when the stock is ready for swarming. With frame hives all that is necessary is to divide a colony into two or more stocks, add the necessary frames, place the hives a few feet on either side of the original stand, cover up warm, and the work is complete.

With straw skeps all that is required is to know when the hive is crowded with bees. This may be done by giving a puff or two of smoke at the entrance, remove the skep from the stand; if the combs are all covered with bees as well as the floorboard, they are then in the right condition for swarming; if, on the contrary, the skep is not well crowded with bees they must remain a few days longer, when they may be again examined.

How often one sees in skeps bees bagging out at the entrance, forming a large cluster half as large as the skep itself. There they will remain for several days or weeks until favourable weather sets in, when they will swarm. During this period but little work is being done, whereas had they been swarmed artificially, and supplied with a small amount of thin syrup daily, they would have half filled a skep with comb, and would have been ready to store a surplus when the fine weather came.

Bees are swarmed artificially similar to the way in which they are driven in the autumn. This has been explained in previous notes. Suffice it to say that the skep to be operated on should be removed from its stand after having had a few puffs of smoke blown in at the entrance. This will cause the bees to fill themselves with honey. Then turn the skep upside down, placing an empty skep on the top. A couple of pieces of bent wire will make some hinges to hold it in position. The operator should sit with his back to the light, so that he has a good view of the bees running up, and that the queen may be seen as she leaves the parent hive with the other bees. Continue drumming the bottom hive with the hands until sufficient bees have ascended. The swarm may then be placed on the old stand, when the bees on the wing on their return home will help to strengthen it. Care must be taken that the old stock is not robbed of too many bees, or it will suffer in consequence. The newly hatched bees will soon replace those which have been taken with the swarm.—AN ENGLISH BEE-KEEPER.



TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, Rose Hill Road, Wandsworth, S.W., and NOT to 12, Mitre Court Chambers, Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *nom de plumes* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

LATE QUESTIONS AND COMMUNICATIONS.—Some communications which arrived when we were preparing for press cannot be inserted this week, and replies to sundry questions must be deferred till the next issue of the JOURNAL OF HORTICULTURE.

Lawn Mowings (P. C. S.).—The short grass removed from lawns is used by some gardeners for mulching—i.e., spreading on the surface of the soil over the roots of vegetable crops and fruit trees for preventing the escape of moisture by evaporation, and thus often doing much good in hot dry weather. We have known the mowings to be spread on the soil in Celery trenches, among Cauliflowers and Lettuce, and along the sides of rows of Peas and Beans, also on the soil near wall and other fruit trees with advantage. Failing such use, the product, when placed in a heap to decay, is good for land that is deficient in vegetable matter. The mowings are not good for placing among Strawberries, as the particles adhere to the ripening fruit.

Melon Leaves Spotted (H. D.).—The leaves are spotted by the rind-rot fungus, *Collitotrichum lagenarium*, which also attacks Kidney Beans and Cucumbers. The best preventive is a rather dry condition of the atmosphere, not necessarily arid, but freely ventilated, so as to prevent the deposition of moisture on the foliage, and not giving more water at the roots than is necessary to keep the plants in health. The seeds also should be examined before sowing, rejecting any that have a dark brown or blackish spot or spots on them; or soak the seeds in water at a temperature of 135° for about five minutes before sowing, and when the plants are up and coming into the second or rough leaf dust them with a preparation of sulphate of copper, such as anti-blight or fostite, and repeat two or three times at intervals of a week or ten days. This will usually prevent its attacking the plants. The best dressing for the soil is lime, using about 2½ per cent., and some little time in advance of the compost being required for use.

Apple Twigs Blighted (A. B.).—The Apple tree shoots have been infested by some caterpillar, which has departed. It appears to have devoured the flowers or centres of the shoots, and may have been one of the many leaf-roller moths. The web may have been that of the small ermine moth caterpillar. The only thing we can suggest is to use early next year a spray of 1 oz. of Paris green in paste, 1 lb. of sulphate of copper, and 2 lbs. of quicklime. Dissolve separately in earthen vessels, and mix well in a wooden tub with 20 gallons of water, strain and apply by means of a knapsack pump when the buds are developing, repeating again before the blossoms unfold. This may destroy the pest and secure a good set of fruit. The twigs are also affected by some fungus, commonly referred to as canker, for which there have been various panaceas, but the fungus in this case can only be got rid of by cutting away the affected portions to sound wood immediately below the dead part. Spraying with the preparation before mentioned will be of service, and in the autumn the trees should be lifted, or if too large for that digging round on one side this year, root-pruning and cutting off any straight down roots. This will check the tendency to the branches dying, treating the other side of the tree similarly the following season. A top-dressing of some approved fertiliser would also be of service, applying shortly after lifting or root-pruning, pointing in lightly and mulching over the roots with short manure.

Liliums (Amateur).—All the Liliums you name have had too much heat, and, moreover, have, perhaps, been at some distance from the glass roof, if not shaded by other plants. We find them the most satisfactory when started in cool frames, the pots plunged at first over their rims in ashes; then when growth is fairly advanced clearing the pots, and top-dressing with rough, rich, loamy soil for inciting stem roots. When the plants are too tall the sashes can be removed, and when the buds are developing the plants may be placed under glass, if needed, for accelerating the expansion or preserving the purity of the blooms. If you remove your plants from under glass now, let them have a shaded position, syringe frequently in dry weather, and take care that they do not suffer by lack of moisture at the roots.

Black Currant Bushes Cropless (A. B.).—The twigs sent are infested with the Currant-bud gall mite (*Phytoptus ribis*), and the pest has destroyed the buds. The mites, however, are not now in the buds, and this is the time to prevent or mitigate further attacks by spraying or syringing the bushes with a solution of petroleum emulsion, wetting them in every part, and repeating again at the beginning of September. The work must be done thoroughly and during a dry time. The petroleum preparation can be procured of any seedsman or horticultural sundriesman, and in using adhere strictly to the instructions. If very badly infested in the autumn, as may be known by the enlarged state of the buds, it would be advisable to cut all away and burn them, but if the treatment advised is followed there may be no need to cut the bushes down. This, as often advised, has only a temporary effect. The point is to kill the mites by the thorough treatment indicated.

Vegetable Marrows Turning Yellow (W. R.).—There must be some particular deficiency in the soil or defect of treatment to cause the fruit to turn yellow instead of swelling in successional order. We should attribute the non-swelling to the plants not having sufficient support. We advise the use of liquid manure liberally in dry weather, and instead of pinching the growths allow them to extend, keeping moderately open rather than crowded. The impregnation is usually effected by insects, but in certain cases it may be necessary to have recourse to artificial means. If ordinary liquid manure, such as that of stables and cow houses, be not at command, you may use a mixture of three parts bone superphosphate, two parts nitrate of potash, and one part gypsum, at the rate of an ounce of the mixture per gallon of water, well mixed and applied clear of the foliage. This may be used about once a week, and with 3 gallons per square yard will be likely to give better results, but do not crowd the growths. The Cucumbers probably do not fruit freely for similar reasons, being too crowded in growth and not supplied with due nourishment.

Apple and Pear Leaves Diseased (J. W.).—On the Apple leaves appear the dark mould, caused by the scab fungus in its early stage, which is very common this season, and disastrous to the foliage of many rosaceous plants. Spray or syringe the trees with a solution of potassium sulphide, 1 oz. to 3 gallons of water, and repeat in about ten days. This will arrest the pest, but the leaves affected will most likely fall at an early date, as they are seriously injured by the parasite. It is a good practice to spray the trees in the early spring, just before the buds commence swelling, with a solution of sulphate of copper, 1 oz. to 1½ gallon of water, just wetting them during a mild dry time. This acts as a preventive, and if the pest appears promptly use the sulphide of potash solution, or better, use it as a preventive just before the trees come into flower, or when the buds are about half expanded, repeating as soon as the first leaves are fairly developed. The Pear leaves are attacked by mites. Spray or syringe them on the under side with a solution of petroleum emulsion, diluting to a safe strength. This will arrest the pests to a certain extent, and thus save the younger leaves from attack. In the autumn syringe the trees with the emulsion during a dry time, from above downwards, so as to reach into the scales of the buds. The emulsion may be used at about double strength then, but in any case attend to the instructions, as to the extent of dilution, supplied with the article, which may be procured of any nurseryman or horticultural sundriesman advertising in our columns.

Raspberries Unsatisfactory (Old Subscriber).—On some chalk formations Raspberries thrive with remarkable vigour, and on others they refuse to grow, which may be due to some peculiar constituent of the soil. Of this we know nothing in your case, only that the "soil is marly over chalk." You do not say whether shallow or what, only "bastard trenched" implies a not very deep soil, therefore we should form trenches as for Celery, and fill them with any vegetable refuse at command, such as that of rubbish heaps, with any soil that can be spared, forming, with refuse potting material, a good vegetable compost, such as frequently accumulates in gardens. Trenches 2 feet wide and deep of such material will usually give good results, but in certain cases the trenches may be mere receptacles for water, and then Raspberries will not grow until means are provided to free it from the stagnant moisture. We have used gravel freely with clayey marl to bring about a better state of things, and then placed the debris of the rubbish heap in ridges on the ground, and on these planted the Raspberries. Then, by mulching with short manure, and improving the staple between the rows, good results have followed. Apples, as a rule, do not thrive on chalk, especially with the kind of surface you describe. It will, perhaps, be necessary to lift the trees and concrete the stations so as to prevent the roots descending, and then form mounds of prepared soil on which to plant the trees afresh. This, with liberal mulching, would probably give the desired results. If wet, drain, and instead of excavating, mix gravel with the marl, forming stations for the trees wholly above the surface. For the Black Currants

we do not see what you need more than some good loam or rubbish heap material to give satisfactory results. Do not be very particular about crocks and the like in the rubbish, for it is mineral matter other than lime the soil requires, a good dressing of ferruginous gravel being of as much importance as the vegetable matter.

Diseased Apple Trees (Exonian).—The cause of the Apple twigs decaying is directly canker, which may be accelerated by the shallow and chalky hungry soil. The fungus has completely girdled the young wood, and the twigs die in consequence of the sap being cut off. Exposed sites, especially on chalk, are not good for Apple trees, and this may have had something to do with the canker, as the growth would probably be free at first through the trees being planted in made soil, and the wood not particularly ripened may have suffered from frost. This origin of the evil appears to date back to at least two winters, perhaps farther, but the collapse is due to the fungus, which probably entered by the frost cracks or "bites." Cut away all the girdled twigs to sound wood, and dress any cankered parts in the autumn with Stockholm tar thinned with petroleum to the consistency of paint, applying to the affected parts only with a half-worn paint brush. Top-dress with short manure now and apply some approved fertiliser. With attention in these respects the trees will probably outgrow the disease. It is important to secure surface roots by summer mulching.

Pests Infesting Beans (Exonian).—The pests are snake millipedes (*Julus pulchellus*), and they, as you say, play havoc amongst Beans, Onions, Turnips, and Potatoes by feeding on the fleshy roots and stems. Dressings of soot are useful in aiding the plants against attacks. Applications of fresh gas lime to the land in autumn usually cleanse the ground from them, but they are fostered in rubbish heaps, and frequently introduced in refuse from them and in manure. The pink-spotted millipede has a fondness for rapemeal, and this we advise for present use, applying 7 lbs. per rod, and after allowing the pests to feed on it for a couple of days dress with nitrate of soda, finely crushed, at the rate of 1 oz. per square yard. There is no occasion to work either the rapemeal or the nitrate of soda into the soil. In the autumn we should dress the land with quicklime, using not less than 5 stones per rod or 5 tons per acre, applying as soon as slaked, and allowing it to lie on the surface a few days before digging in.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Letter Mislaidd*).—1, *Polemonium cœruleum album*; 2, *Polygonum bistorta*; 3, *Veronica gentianoides*; 4, *Astrantia major carinthiaea*; 5, *Veronica teucrium*; 6, *Camelina sativa*. (*P. A.*)—1, *Salvia argentea*; 2, *Pteris serrulata*. (*F. V. F.*)—1, *Cattleya Mendeli*; 2, *Cypripedium Lawrenceanum*. (*D. P.*)—1, *Sambucus aurea variegata*. (*Liverpool Subscriber*).—The specimens are evergreen, *Arbutus Menziesii*; dried truss, *Viburnum tomentosum var. plicatum*; small white flower, *Cistus ladaniferus*. (*J. B.*)—1, One of the many forms of *Athyrium* or *Asplenium filix-femina*; 2, *Valeriana*, species not determinable without leaves; 3, *Selaginella Wildenovi*; 4, *Trachelium cœruleum*; 5, *Euphorbia splendens*.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY. — *Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary* Mr. A. F. Barron, The Royal Gardeners' Orphan Fund, Chiswick, W.

COVENT GARDEN MARKET.—JUNE 29TH.

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100 ...	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, $\frac{1}{2}$ sieve ...	0 0	0 0	Onions, bushel ...	3 6	4 0
Beet, Red, doz. ...	1 0	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Carrots, bunch ...	0 3	0 4	Parsnips, doz. ...	1 0	0 0
Cauliflowers, doz. ...	2 0	3 0	Potatoes, cwt. ...	2 0	4 0
Celery, bundle ...	1 0	0 0	Salsafy, bundle ...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scorzonera, bundle ...	1 6	0 0
Cucumbers ...	0 4	0 8	Seakale, basket ...	1 6	1 0
Endive, doz. ...	1 3	1 6	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 3	0 0	Spinach, pad ...	0 0	0 0
Leeks, bunch ...	0 2	0 0	Sprouts, $\frac{1}{2}$ sieve ...	1 6	1 9
Lettuce, doz. ...	1 3	0 0	Tomatoes, lb. ...	0 4	0 9
Mu-hrooms, lb. ...	0 6	0 8	Turnips, bunch ...	0 3	0 4

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve ...	0 0	to 0 0	Grapes, lb. ...	1 6	to 3 0
Cobs ...	0 0	0 0	Lemons, case ...	11 0	14 0
Filberts, 100 lbs. ...	0 0	0 0	St. Michael's Pines, each	2 6	5 0
Gooseberries, $\frac{1}{2}$ sieve ...	1 6	2 0	Strawberries ...	1 6	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Heliotrope, doz. ...	4 0	to 6 0
Aspidistra, doz. ...	18 0	36 0	Hydrangea, doz. ...	8 0	10 0
Aspidistra, specimen ...	5 0	10 6	Lilium Harrisii, doz. ...	12 0	18 0
Calceolaria, doz. ...	4 0	8 0	Lobelia, doz. ...	3 0	4 0
Coleus, doz. ...	4 0	6 0	Lycopodiums, doz. ...	3 0	4 0
Dracæna, var., doz. ...	12 0	30 0	Marguerite Daisy, doz. ...	6 0	9 0
Dracæna viridis, doz. ...	9 0	18 0	Mignonette, doz. ...	4 0	6 0
Erica various, doz. ...	12 0	24 0	Musk, doz. ...	2 0	6 0
Euonymus, var., doz. ...	6 0	18 0	Myrtles, doz. ...	6 0	9 0
Evergreens, var., doz. ...	4 0	18 0	Palms, in var., each ...	1 0	15 0
Ferns, var., doz. ...	4 0	18 0	specimens ...	21 0	63 0
small, 100 ...	4 0	8 0	Pelargoniums, scarlet, doz.	4 0	6 0
Ficus elastica, each ...	1 0	7 0	" "	8 0	12 0
Foliage plants, var., each	1 0	5 0	Rhodanthé, doz. ...	4 0	6 0
Fuchsia ...	5 0	8 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	3 0	to 4 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Asparagus, Fern, bunch ...	2 0	4 0	Myosotis, doz. bnchs. ...	1 0	2 0
Bouvardias, bunch ...	0 6	0 9	Orchids, var., doz. blooms	1 6	9 0
Carnations, 12 blooms ...	1 0	3 0	Pelargoniums, doz. bnchs.	4 0	6 0
Eucharis, doz. ...	3 0	4 0	Polyanthus, doz. bnchs. ...	1 0	1 6
Gardenias, doz. ...	1 0	3 0	Pyrethrum, doz. bnchs. ...	1 0	1 3
Geranium, scarlet, doz.			Roses (indoor), doz. ...	0 6	1 6
bnchs. ...	0 0	6 0	" Red, doz. ...	0 6	1 0
Iris, doz. bnchs. ...	4 0	6 0	" Tea, white, doz. ...	1 0	2 0
Lilac (French), bunch ...	3 6	4 0	" Yellow, doz. (Perles)	1 0	2 0
Lilium longiflorum, 12 blms	2 0	4 0	" Safrano (English) doz.	1 0	2 0
Lily of the Valley, 12 sprays	1 0	1 6	" Pink, doz. ...	1 6	3 0
Maidenhair Fern, doz.			" Moss, per bunch ...	0 9	1 0
bnchs. ...	4 0	8 0	Smilax, bunch ...	2 0	3 0
Marguerites, doz. bnchs.	1 6	2 6	Sweet Peas, doz. bnchs. ...	1 6	3 0



THE HAYMAKING SEASON.

THE thrifty housewife lives for the future rather than for the present—to-day takes care of itself, to-morrow needs her busy forethought. She may admire a fruitful garden, and mentally weighs and measures the produce. Not much comes in for present use, but the greater part finds its way to the preserving-pan and jelly pots. She sees a large basket of eggs: her instant desire is to plunge them into gallons of pickle. She cannot resist the golden butter of early summer; it goes to her heart to sell it for a small price, and therefore it is found safely stowed away in deep puncheons. The sty of fat pigs suggests noble supplies of lard and toothsome flitches and juicy hams, and she grudges the removal of the necessary trimmings.

It is all very well to laugh at such care and forethought, and condemn it as fussy and tiresome, but the days of plenty do not last for ever, and the cold ungenial seasons come, when we are only too glad of the summer store. And when do we ever find that store too much? Is there a farmer to whom it is not a satisfaction to find that his fodder stacks overlap? Far oftener have we to lament a shortage, and every year we anxiously wonder what we may do to increase our tonnage, knowing full well what a useful—nay, invaluable—thing a bit of good, dry, well got hay will prove to all stock on a mixed occupation.

For many years, beginning about 1878, we had a series of very wet summers, when hay-getting appeared to be a useless pursuit. Then was the time of ensilage—ensilage, that was to prove the perfection of food, and to solve the difficulty. But—like many other universal panaceas—it did not, and after two or three trials most of us came to the conclusion that moderately good hay was superior to ensilage, even of the best quality.

The haymaking season on the great grass farms is a very anxious.

harrassing time. The glass may be at "set fair," and every sign of fine weather. The mowers begin their pleasant task, or on suitable land the grass-cutter will lay swathe after swathe of the fragrant herbage low. The completion of a field generally seems a signal for a break in the weather, and down comes the rain in torrents, and with a relentlessness that is perfectly vindictive. There is nothing to do but to wait, feeling all the time that the soft water is gently drawing all the good out of the grass, and that gallons of capital hay tea are being lost.

The most welcome assistant the farmer has is not so much a burning sun as a brisk drying wind; the sun may be too powerful and take all the nature out, but a good wind does the work more thoroughly and does not detract or extract the valuable properties from the grass. Custom varies much in different counties, even over the process of haymaking, and modern machinery has greatly lessened the mechanical labour. Indeed we do not know where we should find a sufficiency of men able and willing to mow; they only expect to do the rough uneven corners and tiresome bits where the machine can hardly go. There is a time for everything, and it is of material importance that grass should be cut just when it is at its best, and it is most provoking when through stress of unsuitable weather the crop has to stand, and that standing causes hourly deterioration.

The crop say is a light one, possibly owing to lack of moisture or a cold backward season. The farmer cannot possibly spare another acre to "lay in," so he is naturally eager to get the heaviest amount possible. He allows it to stand in the hope of getting better bottom grass, forgetting at the same time that the taller grasses, having flowered, are all past their best, and have reached a stage when their nutritive qualities are practically nil.

The best hay is produced from grass cut before the ripening process has taken place, and the best Clover is made when the plant is almost fully in "knop," and before the bottom leaf begins to fall off. Grass cut too late is deficient in some of its best properties. "All grass in process of time turns to straw, and in doing so the soluble ingredients—sugar, cellulose, and mucilages—become converted partly into woody fibre." After flowering the plant is impoverished, the strength having gone into the seed.

We do not like to see hay too long upon the ground. Well, we may be told, no one does. Possibly not; but for all that there are good people who go about their work not in the handiest and best manner. If the weather look unsatisfactory do not meddle. As long as the freshly cut grass is untouched the rain does not do great harm; it is when half made that the damage is the greatest. Look at a swathe of grass; how close and compact it lies. Shake it about, half make it, and it is left open with no protection against showers.

We prefer, given a suitable day, to manipulate only as much as we can manage to turn over twice. Thus we should work up to dinner time turning and tossing, then begin again and do the same portion over. It is wonderful how quickly hay will "make," and by adopting this plan at any rate all the eggs are not in the same basket. We have a fancy to see hay in "cock" as soon as practicable, believing that in that form it is wonderfully safe from stress of weather. We know this is not a universal custom, but we have proved it to be a good one.

Clover and Sainfoin need very little handling, indeed in handling great damage may be done. It is not the thick strong stems that are of the greatest value, but the juicy knop and the tender leaf. These are easily broken off and destroyed more easily than an amateur would suppose.

It is a very pleasant sight to see the last load safe in the yard, and it is still pleasanter when the stacks are well thatched down, and all danger of "heating" over. A small degree of "sweating" is desirable, but it is an unpleasant surprise to be told that the stacks are rapidly rising in temperature. We fear this oftener occurs in a good hay season than in a damp one. Nature takes her own time to work, and there must be due allowance made for the proper evaporation of sap. "Hasten slowly" is still a good proverb to go by, and much hay and many corn stacks are spoiled by too great hurry.

We believe in "topping" up a stack well before putting on the final thatch. There may always be found on a farm plenty of tough material from hedge bottoms and waste corners, which if properly manipulated will form an excellent protection to the more valuable crop. We are great advocates for cutting up and preserving all sorts of rough bits and storing them with a view to future contingencies. We never know how long winter may last, it is not a season that can be measured by the calendar, and cold winds and sharp frosts often find their way into May and even into June.

WORK ON THE HOME FARM.

Hardly were our notes of last week written and posted before we had an experience, which happily we do not often have in June—it was a really keen frost. As we ourselves lie high and dry, we did not suffer the damage to our Potatoes that we see so sadly prevalent; but already the sudden chill is showing its effect on the Wheat, the hue of which is almost as golden as when harvest is near. We can only hope that this yellow rust will not make itself felt by the presence of mildew later on. We say that we hope, but experience does not give us much encouragement.

Many fields of Potatoes have been very seriously injured along the north-east coast, the haulm being now only a blackened mass. The injury has not been general, but seems to have been local, in a similar way to a thunderstorm. Low wet places have invariably suffered, but dry ground near water has not escaped. There is a curious difference in the effect on different Potatoes. The "Up to Date" variety has shown great susceptibility to frost, and in one case a row of this kind in the midst of a patch of earlies was the only one injured. This seems curious, but we can only account for it on the supposition that the haulm having pushed up quickly would be less hardy than that which had been longer exposed.

Since the frost we have had dry warm weather, but closely followed with a beautiful rain. This is the best thing possible to refresh the cereals after the check, and we are sure to see very considerable benefit therefrom.

Turnips also must now do well, and we hear no further complaints of fly. Hoeing and singling will soon be the staple work of the farm, alternated of course with the necessary periods of haymaking.

We are dipping our sheep, both lambs and ewes; the ewes take very little doing now, and if all are done at once, and again in September, there should be no further trouble from insect parasites.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1898. June.	Barometer at 32°, and Sea Level	Hygrometer		Direc- tion of Wind.	Temp. of soil at 1 foot	Shade Tem- perature.		Radiation Tempera- ture			
		Dry.	Wet.			Max.	Min.	In Sun	On Grass		
	inches	deg.	deg.		deg.	deg.	deg.	deg.	deg.	inches	
Sunday	12	30.267	53.2	50.8	N.E.	58.8	56.9	50.0	64.1	51.7	—
Monday	13	30.272	52.0	48.7	N.	56.9	58.6	47.7	76.1	48.3	—
Tuesday	14	30.277	52.2	47.8	N.	56.0	57.8	48.4	82.0	48.9	—
Wednesday ..	15	30.274	51.3	46.7	N.E.	55.1	64.6	46.9	115.9	46.9	—
Thursday ..	16	30.253	53.4	48.4	N.	56.0	68.4	44.3	117.3	41.6	—
Friday	17	30.277	59.1	54.5	S.	56.8	73.1	50.3	105.6	46.9	—
Saturday	18	30.182	67.8	59.0	W.	57.7	77.4	51.8	123.0	48.3	0.014
		30.257	55.6	50.8		56.8	65.3	48.5	97.7	47.5	0.014
Sunday	19	30.129	65.1	59.8	W.	60.2	74.1	60.1	117.8	58.2	—
Monday	20	30.062	63.9	59.8	W.	60.3	74.8	53.8	114.8	50.9	—
Tuesday	21	29.944	68.7	63.0	W.	61.1	77.2	60.9	124.8	56.7	0.010
Wednesday ..	22	29.801	66.2	57.9	N.	61.8	71.7	55.7	122.1	52.9	—
Thursday ..	23	29.945	60.0	50.9	W.	60.9	69.1	46.3	119.4	44.9	0.077
Friday	24	29.741	56.4	55.4	W.	61.0	61.2	52.7	100.1	52.3	0.195
Saturday ..	25	20.503	59.7	53.6	S.W.	59.0	64.8	52.8	111.2	49.9	0.128
		29.875	62.9	57.2		60.6	70.4	54.6	115.7	52.3	0.410

REMARKS.

- 12th.—Cold, with leaden sky throughout.
 13th.—Overcast and cold.
 14th.—Overcast morning; fair afternoon, but sunless.
 15th.—Overcast early; frequently sunny after 10.30, and bright from 3 P.M.
 16th.—Overcast till 10.30 A.M.; bright sun in afternoon.
 17th.—Much cloud, but sunny at times, especially in afternoon.
 18th.—A perfect June day, but a shower between 8 and 9 P.M.
 A cold, and but for the last two days, a very cold week. Practically no rain
 19th.—Overcast early, but generally sunny after 11 A.M.
 20th.—Generally overcast till 9.30 A.M. and after noon; frequent sun in morning.
 21st.—Overcast early, and frequent cloud in morning; bright sun in afternoon.
 22nd.—A sprinkle of rain about 4 A.M.; frequent cloud in morning, bright sun after.
 23rd.—Bright and fresh day; overcast evening.
 24th.—Cold and dull, with rain or drizzle almost all the morning.
 25th.—Alternate sunshine and storm rains in morning; generally cloudy after, with spots of rain.
 A week of average temperature and rainfall.—G. J. SYMONS.

